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**FOREIGN
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JPRS Report

Proliferation Issues

PROLIFERATION ISSUES

JPRS-TND-92-044

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24 November 1992

[This report contains foreign media information on issues related to worldwide proliferation and transfer activities in nuclear, chemical, and biological weapons, including delivery systems and the transfer of weapons-relevant technologies.]

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LIBERIA

Nigerian Plans to Wage Chemical Warfare Alleged

AB0711105092 Gbarnga Radio ELBC in English
0700 GMT 7 Nov 92

[Text] Well, as we told you before, or as you may have heard earlier, we have in our possession [words indistinct] confidential documents, and for the benefit of the public, we want to now present these documents. [passage indistinct] (?ECOFUND) 9.92. Quarterly meeting of Nigerian Committee on ECOMOG [Economic Community of West African States Cease-Fire Monitoring Group]. Date: Friday 25 September 1992. The committee met at Nigerian Institute of International Affairs on Friday, 25th of September 1992. Technical minister in the Ministry of External Affairs presided over the meeting while the head of the West African peacekeeping force, ECOMOG, Major General Ishaya Bakut, was present.

The minister addressed the gathering and showed his displeasure at the ongoing process in Liberia. He recalled the last meeting of the Armed Forces Consultative Council, which consists of all [words indistinct] majors and captains, which met [words indistinct] in Liberia. He was not particularly happy about the prolonged war in Liberia. He said as of Monday, Nigeria had committed over 2 billion naira to the operation, with over 5,000 soldiers in men [words indistinct]. Apart from that, the Nigerian public is not happy with the long delay. The capture and humiliation of 580 ECOMOG African fighters by Charles Taylor does not do Nigeria image any good. The recent call by the Nigerian Labor Congress [words indistinct] leaders for Nigeria to withdraw our troops at this stage, is a bad omen in (?Nigeria). This present administration wants to [words indistinct] before they can leave the [word indistinct] of power.

He stated that Nigeria will not withdraw at this stage of the operation, but [words indistinct] money and men. He wants this committee, which had been set up since the Liberian crisis, to advise and analyze the Liberian problem properly.

Next to speak was Maj. Gen. Ishaya Bakut. He said that since he took over, he had visited Taylor's enclave 15 times and held discussions with him on disarmament of his troops. Each time, Taylor brings a new problem and talks of ULIMO [United Liberation Movement for Democracy in Liberia] being backed by ECOMOG. He said he undertook shuttle diplomacy among ECOWAS leaders. He said his mission was [words indistinct] and continuing deadlock on ECOWAS peace initiatives on the Liberian crisis, resulting in disagreement between the NPFL (National Patriotic Front of Liberia) and ECOMOG over [passage indistinct].

Bakut said the peace process deadlocked because Taylor wants to [words indistinct] that are different from the ones in the accords. When he eventually declared the truce, Taylor started to put conditions that ports of entry

should be manned one by one, which was not provided in the constitution. Eventually, after deploying some troops to Charles Taylor's territory, he rounded them up, (?tortured) and humiliated them, [words indistinct] a combined effort by the Americans and other countries before the troops were let off. In fact, it was Burkina Faso's president who personally persuaded Taylor to release them. My conclusion is that we do not need ECOWAS' leaders agreement or accord before [words indistinct]. Once the heads of state of countries that contributed troops to ECOMOG agreed for an onslaught, my belief is that we should go all out.

After he finishes, the head of Intelligence Section monitoring economy, firms, and activities of Taylor, Dr. (Womemo Ogunsanya), made his report. He said it is not a hidden fact that Liberia's economic resources are being (?perished) for the export market. At the Port of Buchanan, Greenville, and Harper [passage indistinct] one (Koton Bomba) from Liberia, and Mohamed (Korano) from Burkina Faso, and a French man (Helmud Emmanuel), the president of the French National Assembly, as Taylor's (?helps). The three mentioned people are business partners of Blaise Compaore of Burkina Faso. Taylor has bought a villa in Switzerland at two addresses: [words indistinct] CH, Court Maritaine, Chapelina, Geneva. He (?kept) his account there. As for the following countries, Cote d'Ivoire [Ivory Coast], Burkina Faso, Libya, Iraq, we do not need to be convinced about their involvement, help, and assistance to Taylor.

After he sat down, the committee recommended the following decisions to the Armed Forces Ruling Council, that:

A: General Bakut should be recalled home and a new ECOMOG commander should be appointed.

B: That, the new ECOMOG commander should be given the following mandate: to flush Charles Taylor (?35) miles from Monrovia before the 30th of November 1992. We want ECOMOG to flush Charles Taylor before the 30th November 1992 and take control of the whole country, Liberia, in parentheses;

That the ports of Buchanan, Greenville, and Harper, which Taylor use, should be taken over in three weeks after the arrival of the new commander;

That Nigeria should increase her troops by 3,000 men; Ghana, by 1,000 men; and Senegal, 500 men; and Guinea, 500 men;

That Nigeria should persuade the other countries to start chemical warfare;

That three naval warships, with naval war equipment, should be sent to Monrovia;

That many MK 89 Lynx helicopters, from the dreaded 141 Squadron, should be deployed to Liberia. Also, the coastal patrol craft, with [word indistinct] surface to

surface missiles, should be deployed. NNS Aradu, Nigerian flag ship, with the blue water force in Black Africa, should be deployed immediately to Liberia. A committee [passage indistinct].

That is the first portion of that very delicate, confidential document retrieved from a recent meeting held by ECOMOG on plans to wage chemical warfare on this country. [passage indistinct]

ECOMOG Denies Use of Chemical Weapons

*AB0911120692 Monrovia Radio ELBC in English
0900 GMT 9 Nov 92*

[Text] The ECOMOG [Economic Community of West African States Cease-Fire Monitoring Group] headquarters in Monrovia has dismissed as false claim by the NPFL [National Patriotic Front of Liberia] that the peacekeeping force is using chemical weapons in efforts to repel and contain any NPFL attacks on Monrovia. An ECOMOG release issued in Monrovia over the weekend pointed out that countries contributing troops to ECOMOG have no chemical weapons in their arsenal, and I quote: The West African peacekeeping force does not have any chemical weapons.

According to the release, ECOMOG as a subregional force (?respects) international conventions prohibiting the use of chemical weapons in any military operation. The [words indistinct] says it is concerned about the NPFL's claim because experience has shown the NPFL's willingness to (?make) deliberate false allegations whenever it is [word indistinct] intention. ECOMOG (?will) believe that this major false allegation must be a [words indistinct] Charles Taylor (?is acquiring) or has already acquired chemical weapons [words indistinct] to use them against hundreds and thousands of citizens, (?foreigners, and the) ECOMOG. Mr. Taylor has started his military attacks on Monrovia.

The peacekeeping force is therefore urging the NPFL to again reconsider the consequences of its action [words indistinct] allowing reason to prevail. ECOMOG is also urging people supplying Mr. Taylor to reconsider their actions (?as) their efforts have only enabled Mr. Taylor to continue to unleash destruction and death on the Liberian people.

SOUTH AFRICA

AEC Commercialization Program Detailed

*MB0311144892 Johannesburg THE STAR in English
3 Nov 92 p 13*

[Report by Anita Allen: "AEC Steps Out of the Closet"]

[Text] The Atomic Energy Corporation (AEC), whose activities have been conducted in secret for so many years, has come out into the open and revealed how it is trying to become a commercially viable operation.

Since 1990 it has been following an aggressive commercialisation programme, which has seen more than 100 non-nuclear fuel products developed for the commercial

market. It has also closed down non-viable plants and activities, or those using old technologies, and has concentrated on worldwide marketing of uranium in refined form by value addition. It has also reduced its staff by nearly 5,000 in seven years.

In financial year ending March 31 1992, the AEC still received R[Rand]685 million in taxpayers' money from the Government, of which R212.8 million went to financing costs and loan redemptions and the remainder, R472 million, on operating expenses for nuclear activities.

This represents a sharp R322 million cutback in State support over the past two years. However, total income from sales (including nuclear fuel) amounted to only R142 million.

According to the AEC's annual report, which is the first to be made public, the corporation plans to lessen its dependence on State support significantly and aims to break even in the next few years. For budget purposes the AEC falls under the Department of Mineral and Energy Affairs and the report was tabled in Parliament on October 15 without any fanfare.

During the year, the AEC accelerated depreciation on fixed assets used in the nuclear process by nearly R670 million. Had it not done so, instead of a deficit of R587 million, it would have shown an operating surplus of R95 million on the existing level of State support.

"The process of rationalisation has not been without pain," chief executive Dr. Waldo Stumpf told THE STAR. "We have had to reduce staff from 8,200 in 1986 to 3,570. This has been a heavy loss of expertise."

Stumpf confirmed that AEC's commercialisation and diversification strategy, implemented in 1990, was aimed at re-directing the AEC's inventory of high-level know-how and technology to meet the needs of the industry re-emerging into the world economy.

"This is not an easy transformation and cannot happen overnight. It is, however, an exciting venture for a promising future with an objective to support the SA economy in the creation of wealth for all the people of our country," Stumpf said.

During the year, the AEC assumed an additional statutory responsibility to manage and administer safeguards for the South African nuclear industry. Dr. Wynand de Villiers noted in his chairman's review.

He said that as a signatory to the Nuclear Non-Proliferation Treaty (NPT) on July 10 1991, SA's nuclear industry now operated in accordance with international requirements.

The AEC kept records in compliance with the requirements of the safeguards agreement with the International Atomic Energy Agency (IAEA), which was signed seven weeks after signing the NPT in September 1991.

"South Africa's inventory of nuclear material and facilities was submitted without delay and as agreed. This

together with its positive contribution to the implementation of nuclear safeguards, is an indication of the early normalisation of South Africa's international nuclear relations and contributed in a large degree to the lifting of international sanctions in the nuclear field."

De Villiers said the year had been played out against a background of a world recession. In addition, the image of the nuclear energy industry was still being negatively affected by the aftermath of the Chernobyl disaster and the spreading knowledge of the poor design and safety performance of power stations in eastern Europe.

This contributed to the probability that a revival of nuclear power could not be expected until the next century. The result was that most countries, including South Africa, had an excess production capability in the nuclear industry.

In South Africa Eskom [Electricity Supply Commission] also had an excess electricity generation capability and the erection of a second nuclear power station could only be expected towards the end of the first decade of the next century. In addition, owing to the low growth in demand for electricity, Koeberg was operating at less than its designed capacity, which significantly reduced its demand for nuclear fuel.

Because of commercial viability, the AEC discontinued the following activities: pilot enrichment plant; reactor

development programme; nuclear engineering programme at Gauriqua; DELTA-2 programme (zirconium fabrication from own sources); centrifuge enrichment programme; nuclear fusion programme and a number of smaller activities.

The nuclear fusion programme was AEC's only fundamental research programme, this, as well as research on centrifuge enrichment, has been abandoned in favour of concentrating on laser enrichment.

Restricting Weapons of Mass Destruction Planned

93WP0025A Johannesburg *ENGINEERING NEWS*
in English 9 Oct 92 p 3

[Text] The South African government has announced its intention to promulgate a bill restricting the build-up of "weapons of mass destruction" in South Africa.

Acting Director-General of the Department of Trade and Industry Gerrit Breyt said last week that "considerable pressure" was expected to be exerted on South Africa to "exercise control" over the technologies, abilities and products considered by the international community to be "sensitive in nature".

An interdepartmental committee has been appointed to draft non-proliferation legislation.

The draft bill, published for comment in the Government Gazette last week, is expected to be tabled in Parliament during 1993.

Zou Jiahua Meets French Atomic Energy Businessman

*OW1611093992 Beijing XINHUA in English
0843 GMT 16 Nov 92*

[Text] Beijing, November 16 (XINHUA)—Chinese Vice-Premier Zou Jiahua met with Jean-Claude Leny, chairman of Framatome, a French company of atomic energy, here this afternoon.

They discussed further cooperation between Framatome and Chinese departments.

In April 1984, Framatome signed with the Chinese side a contract on the construction of two 900,000-kilowatt sets for the nuclear power station in China's Dayawan. Last April, the company signed another contract with China on the technology transfer involving the construction of two 600,000-kilowatt sets for China's Qinshan nuclear power station.

Huang Yicheng, Chinese minister of Energy resources, was present at today's meeting.

Ukraine's Willingness To Sell Nukes Noted

*OW1211082692 Beijing China Radio International
in Russian 1900 GMT 11 Nov 92*

[Text] First deputy prime minister of the Ukraine, Yukhnovskyy said in Vienna on 10 November that the Ukraine will review the question of selling the nuclear weapons located on its territory.

As the Austrian Press Agency reports, Ihor Yukhnovskyy said on 10 November that the Ukraine will try to turn its country into a nuclear-free zone, that the Ukraine considers the nuclear weapons left by the former Soviet Union on its territory as national property, and will look at the question of selling these nuclear weapons to those countries who will give the highest price. The Ukraine is ready to sell these weapons to the West, Yukhnovskyy reported.

UN Envoy Gives Statement on Nuclear Disarmament

*OW1711112592 Beijing BEIJING REVIEW in English
No 45, 9-16 Nov 92 pp 9-11*

[Statement by Ambassador to the United Nations Hou Zhitong at the First Committee of the 47th session of the United Nations general Assen.bly on 21 October]

[Excerpt] Since the last session of the United Nations General Assembly, major events have occurred one after another in international relations and the world situation has undergone profound changes. The international community has finally rid itself of the old world pattern characterized by the confrontation between the East and West military blocs. The world, developing in the direction of multipolarity, has embarked on a new historical phase. Peace and development are still the present-day world's two main subjects.

However, world peace and tranquility, which the international community avidly longed for, have not automatically descended in the wake of the demise of the "cold war." Owing to serious imbalance of power in the world, contradictions concealed in the past have intensified, and the North-South disparities become more prominent. In addition, old and new contentions and disputes interweave with one another. All these make the world more turbulent and volatile, and have even given rise to fierce armed conflicts. The existence of hegemonism and power politics is still the principal obstacle to resolving the questions of peace, security and development.

Faced with a complicated and turbulent international situation, the people of the world even more urgently demand the dismantling of the old unequal international order and more strongly call for the establishment of a new international order. A peaceful, stable, just and rational new international order, including an equal and mutually beneficial new international economic order, "should be built upon the principles of mutual respect of sovereignty and territorial integrity, mutual nonaggression, non-interference in each other's internal affairs, equality and mutual benefit and peaceful coexistence. Only in this way can countries in the world pursue common development in an international environment of enduring peace and security. We firmly believe that as the world develops in the direction of multipolarity, such a new international order will ultimately be established.

With the changes in the world structure, same progress has been made in the field of arms control and disarmament. The United States and the Russian Federation have ratified their START treaty and reached understanding on further reducing their strategic nuclear arsenals. Not long ago, the United States announced that it would withdraw tactical nuclear weapons from overseas, and the CFE agreement began to be implemented. The international community welcomes these positive developments and hopes that the parties concerned will faithfully implement the agreements and understanding they have reached. In the meantime, people have also realized that there is still a long way to go in disarmament, and even after the above steps of arms reduction are completed, the reality will remain unchanged that the two military powers possess the largest and most advanced nuclear arsenals, sophisticated weaponry and the capability for developing space weapons. Therefore, they still have special responsibility for disarmament. The international community urges them to further drastically reduce their nuclear arsenals, destroy the nuclear warheads that are cut, halt the upgrading, production and deployment of nuclear weapons and stop developing space weapons.

Complete prohibition and thorough destruction of nuclear weapons is what the Chinese Government has consistently stood for, and the urgent aspiration and fundamental objective of the international community as well. In order to achieve this ultimate goal, at present

it is necessary to take some transitional measures. In this regard, China is ready to put forward the following proposals:

1. All nuclear-weapon states follow China's lead in making the commitment not to be the first to use nuclear weapons and unconditionally not to use or threaten to use nuclear weapons against non-nuclear-weapon states or nuclear-weapon-free zones. An international agreement should be reached in this regard.
2. All other nuclear-weapon states support, as China has done, the proposal for establishing nuclear-weapon-free zones, respect the status of such zones, and undertake corresponding obligations. We also urge the countries that have deployed nuclear weapons abroad to withdraw all these weapons back immediately.
3. All the countries that have space capabilities should observe the principle of peaceful use of outer space, immediately stop the research, test, production and deployment of space weapons and not introduce weapon systems into outer space.

As a nuclear-weapon state, China has unilaterally and unconditionally assumed corresponding obligations in these important areas and made its own contributions. We hope that the other nuclear-weapon states will do likewise.

Proceeding from its principled position for complete prohibition and thorough destruction of nuclear weapons, the Chinese government has consistently supported and participated in the international community's efforts for preventing the proliferation of nuclear weapons. Out of its support for the purposes and objectives of the Treaty on the Non-Proliferation of Nuclear Weapons and taking into consideration the aspirations of non-nuclear-weapon states, China officially acceded to the treaty last March.

NPT is one of the most universally accepted international instruments in the field of arms control. Although not free from defects and inadequacies, it plays a positive role in preventing the proliferation of nuclear weapons. A conference of the parties to the treaty will be held in 1995. We are ready to take part in the work of its preparatory committee with a constructive attitude.

We believe that in order to increase the universality of NPT and strike a balance between the rights and obligations of its states parties, it would be utmost important for the major nuclear-weapon powers to accelerate the process of nuclear disarmament and abandon the policy of nuclear deterrence, for all nuclear weapon states to provide security assurances to non-nuclear states and unconditionally undertake the obligation not to be the first to use nuclear weapons, for nuclear industry capable states to actively promote international cooperation in the peaceful use of nuclear energy in benefit of the economic and social development of various countries, especially developing countries, and for the international non-proliferation regime to be strengthened with the full participation of non-nuclear-weapon states.

China always supports the demands for establishing nuclear-weapon-free zones and zones of peace made by relevant countries in various regions on the basis of voluntary consultations. In the meantime, we have all along advocated that the nuclear weapon states should respect the status of nuclear-weapon-free zones and assume corresponding obligations. This is an effective measure conducive to various regions' security and stability and to the promotion of nuclear disarmament. On the basis of this principled position, China has signed and ratified the relevant additional protocols to the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean and the South Pacific Nuclear Free Zone Treaty, and we support the proposals for establishing nuclear-weapon-free zones in Africa, the Middle East, South Asia and the Korean Peninsula. Here I wish to state that the Chinese government supports the efforts of the special conference held recently by the states parties to the Treaty of Tlatelolco for improving the treaty's universality and effectiveness and reaffirms the obligations China has undertaken in relation to the treaty. Meanwhile we appreciate the recent ratification by France of the additional protocol I to the treaty.

After many years of negotiations at the Conference on Disarmament, an international convention has finally been concluded on the complete prohibition and thorough destruction of chemical weapons, thereby laying down an international legal basis for eliminating globally this entire category of weapons of mass destruction. As a non-chemical-weapon state which was deeply victimized by foreign chemical weapons in its history, China has consistently stood for complete prohibition and thorough destruction of all chemical weapons and the production facilities thereof. By attaching great importance to and taking an active part in the negotiations on the chemical weapons convention we have made our own contributions. Although the present draft convention still suffers from certain defects, inadequacies and imbalanced contents, we believe that its purposes and objectives, namely the complete prohibition and thorough destruction of chemical weapons, should enjoy broad approval and support of the international community. Therefore, China joined the consensus on the draft convention at The Conference of Disarmament and agreed that the draft convention be submitted to the current session of the General Assembly for deliberation. In the meantime, in its statement of positions, China also expressed its concerns and reservations over the defects of the draft convention, as well as its hope that these defects will be resolved appropriately. In view of China, complete achievement of the basic objectives of the draft convention and the realization of a chemical-weapon-free world will undoubtedly be of positive significance to maintaining international peace and security. [passage omitted]

UN Envoy Denies Missile Delivery to Iraq

TA1011183392 Jerusalem Qol Yisra'el in Hebrew
1800 GMT 10 Nov 92

[Text] China's UN Ambassador Li Daoyu says the PRC did not deliver any missile equipment to Iraq. Our

Washington correspondent Arye Golan reports that the Chinese ambassador made this statement in a phone conversation with Israel's UN Ambassador Gad Ya'aqobi. According to Li Daoyu, the PRC's ambassador to Iraq put in an order for two containers of building material for the Chinese Embassy in Baghdad, but these did not contain any military spare parts or other missile equipment.

UN Approves Draft on Nuclear Power in Space

OW3010234192 Beijing XINHUA in English
2228 GMT 30 Oct 92

[Text] United Nations, October 30 (XINHUA)—The special political committee of the U.N. today approved a draft resolution on the principles in the use of nuclear power sources in outer space.

The draft resolution recognizes the need for a set of goals and guidelines to ensure safe use of nuclear power in outer space and the need for future revision of the principles in view of emerging nuclear-power applications and of evolving international recommendations on radiological protection.

The draft, which was proposed by Austria on behalf of the committee's working group on outer space cooperation, affirms that the set of principles are applied to nuclear power sources in outer space devoted to the generation of electric power on board space objects.

According to the first principle, activities involving the use of nuclear power sources in outer space should be carried out in accordance with international law, in particular the U.N. Charter.

Another principle gives guidelines and criteria for safe use of nuclear power sources in outer space and states that the use of nuclear power sources in outer space should be restricted to those space missions which cannot be operated by non-nuclear energy sources.

The design and construction of the source system should take into account relevant international guidelines, and safety system should be designed at the same time, according to the draft resolution.

The draft resolution will have to be submitted to the general assembly for final adoption.

Government Comments on Draft CW Convention

OW1211223292 Beijing XINHUA in English
2215 GMT 12 Nov 92

[Text] United Nations, November 12 (XINHUA)—China says the draft convention on prohibition and destruction of chemical weapons (CW) will undoubtedly be conducive to maintaining world peace and security.

Reiterating China's position on the draft CW convention today at the first committee, Chinese Ambassador Hou Zitong said the draft convention lays down an international legal basis for eliminating the entire category of CW weapons of mass destruction from the whole world.

Standing for the fundamentally correct purposes and objectives of prohibition and destruction of chemical weapons, he continued, the draft enjoys broad approval and support from the international community.

"The full achievement of these purposes and objectives, leading to a chemical-weapon free world, will undoubtedly be conducive to maintaining international peace and security," he added.

Ambassador Hou said that China, as a non-CW state and a victim of the scourge of foreign chemical weapons, has consistently stood for complete prohibition and thorough destruction of such weapons and their production facilities, and has made contributions to the conclusion of the draft convention by taking an active part in the negotiations on the draft.

The ambassador pointed out, the draft convention contains some defects, however, lacks proper balance and not adequately reflects the just demands and reasonable propositions of numerous developing countries.

Therefore, like many other countries, China cannot help expressing its concern and reservation over such drawbacks of the draft convention, the ambassador said, hoping that these problems will be resolved constructively.

The draft convention was concluded by the conference of disarmament last September at Geneva after 20 years of negotiations.

Latest Data on Nuclear Reactors Disclosed

HK2710151592 Hong Kong ZHONGGUO TONGXUN
SHE in Chinese 0524 GMT 12 Oct 92

[Text] Beijing, 12 October (ZHONGGUO TONGXUN SHE)—The structural design of China's nuclear reactors is approaching the international standard. This is the information disclosed at the Seventh China Nuclear Reactor Structural Mechanics Meeting which ended the day before yesterday.

China's structural mechanics of nuclear reactors has developed through its own engineering and technical force over the past 20 to 30 years, playing an enormous part in the construction projects of Qinshan Nuclear Power Plant with a capacity of 300,000 kilowatts, Qinghua Hypothermic Reactor [di wen dui 0144 3306 1018] with a capacity of 50,000 kilowatts, China Nuclear Power Pulser [mai chong dui 9115 0395 1018], and so on.

After extensive discussions on the safety function of Qinshan Nuclear Power Plant, experts believe that even if Qinshan nuclear isle is struck by large-sized flying objects, which is hardly possible, the reactor will still be very safe and reliable.

It is reported that U.S. and Japanese experts were for the first time invited to attend the above mentioned meeting. This shows that international contacts have been intensified by China's nuclear reactor structural mechanics circle.

Controlled Nuclear Fusion Research To Be Upgraded

OW1611091392 Beijing XINHUA in English
0844 GMT 16 Nov 92

[Text] Chengdu, November 16 (XINHUA)—China's largest item of controlled nuclear fusion research, the HL-1 Tokamak (China), is to be updated.

According to an appraisal conference sponsored by the Southwestern Institute of Nuclear Physics, new technology in this area will be introduced to the project.

Controlled nuclear fusion aims to extract useful materials from sea water.

In September 1984 China set up its largest nuclear fusion device, and since then it has undertaken more than 20 experimental programs and completed more than 430 projects.

The device has reached the international standard in plasma quality parameters, and has enabled China to participate in international cooperation in this field.

Nuclear Corporation Head Describes Industry

HK3010045292 Hong Kong TA KUNG PAO in Chinese
13 Oct 92 p 4

["New Information on Opening Up" column by staff reporter Cheng Kang-ying (6774 6921 5391): "China's Nuclear Industry Taps Overseas Market—Interview with Li Dingfan, vice president of the China National Nuclear Corporation"]

[Text] Li Dingfan, vice president of the China National Nuclear Corporation, told reporters yesterday that the principles governing China's export of nuclear industry-related science and technology are as follows: (1) It should be used for peaceful purposes; (2) it should be subject to inspection by the International Atomic Energy Agency; (3) relevant technology may not be transferred to a third country without China's consent.

Li noted that as long as the three aforementioned principles are observed, then China will not be influenced by other countries nor will it take notice of pressure from other countries. While China does not advocate nuclear proliferation, it opposes using this as an excuse to deprive developing countries of the legitimate right to use nuclear energy for peaceful purposes.

Li is the head of a Chinese nuclear industry trade delegation which is in Hong Kong to take part in a news conference related to the "1993 Hong Kong seminar on international cooperation on the peaceful use of military technology." He made the above statements in an interview with reporters at his hotel yesterday.

He stated: The China National Nuclear Corporation is a national industrial corporation which evolved from the former Ministry of Nuclear Energy, and which incorporates science and technology, industry, and trade. It is charged with production, operations, scientific research, development, and construction related to China's

nuclear industry. In describing the 30 years since China's nuclear industry was created in 1955, he said that a complete system in nuclear science and technology and industry has been formed to establish China's position in the world nuclear domain.

Li went on: Since 1979, when the focus in the development of China's nuclear industry was shifted to serving the national economy by adopting the guideline of "nuclear energy as the principal means supplemented by various types of operations," outstanding accomplishments have been scored over the past decade. By the end of 1991, the output value of the corporation's civilian industries already accounted for 50 percent of the corporation's total output value and is expected to reach some 80 percent in the coming years.

He said: In order to satisfy the energy demands in national economic construction endeavors, developing nuclear power is the primary task of the nuclear industry at the moment. On one hand, they rely on their own efforts to make full use of the existing industrial base, and at the same time, absorb foreign technology, purchase some key equipment, and develop nuclear power technology independently; on the other hand, they also import complete sets of foreign nuclear power units. Construction of the Qinshan nuclear power station and the Daya Bay Nuclear Power Station was initiated by following these two formulas.

Importing Technology to Build Nuclear Power Plants

In the application of nuclear technology, Li noted that nuclear technology accumulated over decades of development in China's nuclear industry is presently being transferred actively into the civilian industrial sector where the expertise and technological edge of the nuclear industry are actively applied in the construction of pressing projects related to the national economic development to produce industrial products needed in economic construction and in people's daily lives. These products include instruments and meters, metal materials, rare earth products, construction materials, chemical machinery, fine chemicals, light industrial products, and others.

He pointed out: China's nuclear industry was built on the basis of self-reliance, and its technology and experience are very much suited to the needs of developing countries. In line with the principle of "equality, mutual benefits, and joint development," it engages in cooperation with Third World countries and regions in the peaceful application of nuclear energy and nuclear technology.

He went on: Small Chinese nuclear reactors have already been exported to the Third World, including a 10-megawatt heavy water research reactor which was exported to Algeria, and which became fully operational in July this year; last December, China and Pakistan signed a contract providing for the export to Pakistan of a 300,000-kilowatt nuclear power unit. China has won

extensive welcome from the Third World countries regarding its efforts in the peaceful application of nuclear energy.

Broad Search for Foreign Cooperation

Speaking on this visit to Hong Kong to prepare for next year's exchange meeting on international cooperation of conversion of military to civilian industries, Li stated that this exchange meeting is the first such large scale activity to be held in the territory, adding that the China National Nuclear Corporation will take part and carry out exchanges by mobilizing 70 units from its system and bringing more than 200 products and items under 16 major categories to the meeting. The modes of cooperation will be flexible and may include joint equity construction, use of foreign capital, compensation trade, importation of technology, importation of facilities, joint development, cooperation in production, establishment of factories outside the territory, building contracts, and distribution of products.

Li stated: The application and development of nuclear energy is the focus of the corporation's external cooperation. China will step up the pace of nuclear power construction as it plans to build several 300,000- and 600,000-kilowatt nuclear power stations in the short term period. Some \$1.6 billion in foreign capital will be needed to bring in the necessary technology as well as the necessary facilities and materials. Meanwhile, the corporation will also offer 300,000-kilowatt nuclear power units and research reactors to the international market. In addition, cooperation is also sought for more than 40 planned construction projects which will require a total investment of roughly 3 billion yuan renmibi and \$300 million in foreign capital.

He said: The China National Nuclear Corporation has already prepared dozens of plots spanning 700,000 square meters for joint development with foreign businesses. These plots are found in Beijing, Shenzhen, Qinhuaogdao, Pudong, Dalian, Lanzhou, Changsha, Chengdu, Jiujiang, Yueyang, Yining, and other cities. Joint efforts may be carried out to build commercial and residential buildings, as well as to develop the service, processing, and other civilian industries.

AUSTRALIA

Claim of Uranium Sale to Indonesia Denied

BK1611065292 Hong Kong AFP in English 0256 GMT
16 Nov 92

[Text] Sydney, Nov 16 (AFP)—The Australian Government denied claims made by Greenpeace on Monday that it might sell uranium to Indonesia to support that country's nascent nuclear power programme.

Greenpeace called on its supporters and the Australian public to inundate the office of Prime Minister Paul Keating with faxes and phone calls to oppose an agreement to transfer nuclear science and technology that it said would be signed in Jakarta this week.

The environmental group said the agreement would be signed by Foreign Minister Gareth Evans, one of five Australian ministers taking part in the first ministerial forum with Indonesia, which started Monday.

"It is possible that uranium sales to Indonesia will follow," Greenpeace said in leaflets distributed on the streets here by activists manning makeshift phone and fax centres.

A spokesman for Evans in Canberra categorically denied that the government was considering uranium sales to Indonesia.

"What they are talking about is the Indonesian Science and Technology Cooperation Agreement, which will facilitate cooperation between the two countries in the area of nuclear technology," the spokesman said by telephone, adding: "It is not an agreement to sell uranium."

The agreement would allow Indonesia access to Australian know-how on nuclear medicine, the management of nuclear waste, the assessment of technology and radiation protection, the spokesman said.

He dismissed as "bizarre allegations" claims by Greenpeace's nuclear campaign coordinator Jean McSorley that "the government is aiding our nearest neighbour's nuclear ambitions."

McSorley accused the government of conducting business in secret, saying: "It is hardly surprising that the Australian Government did not want this issue discussed, nor is it surprising that the actual signing ceremony is taking place in Jakarta, as opposed to Canberra."

Greenpeace said Indonesia planned to build between seven and 12 nuclear power plants that would become operational between 2003 and 2015.

JAPAN

Russian Space Official Urges Monitoring N-Arms

OW1611132592 Tokyo KYODO in English 1257 GMT
16 Nov 92

[Text] Tokyo, Nov. 16 KYODO—A veteran Russian cosmonaut called Monday [16 November] for enhancing

space-based monitoring of compliance by major military powers with strategic nuclear arms cutback treaties.

Vladimir Shatalov, head of Russia's Cosmonaut Training Center, made the proposal before a group of some 300 scientists and cosmonauts from 39 countries at the Asia-Pacific International Space Year Conference. Shatalov is a former pilot of the Soviet Union's Soyuz spacecraft, who oversaw the world's first successful spacecraft docking.

He said such space-based monitoring collaboration would also help uncover possible efforts by smaller nations to develop nuclear weapons.

Shatalov, mentor of Japan's first astronaut-cum-journalist Toyohiro Akiyama of the Tokyo Broadcasting System (TBS) who trained in his institute outside Moscow, said, "The destiny of mankind depends on their behavior." Humanity should recognize the possible fate of the planet, saddled as it is with numerous nuclear missiles, he said.

He underscored the importance of space-based reconnaissance efforts in forcing countries with nuclear missiles to start talks on cutting back.

"Negotiations on Strategic Arms Reduction Talks were initiated only after negotiators (from the U.S. and Russia) notified other sides they have already detected the whereabouts of the other's nuclear arms sites," he said. "Should such a multilateral monitoring mechanism be introduced, we would be able to observe military drills in border areas," Shatalov said.

Later the same day, Jerome Apt, one of six American crew members of the Endeavour space shuttle who participated in a flight mission in September with Japanese astronaut Mamoru Mohri, told a press conference he has similar sentiments to Shatalov. Apt, a mission specialist at the National Aeronautics and Space Administration (NASA), also said international cooperation and solidarity can be accomplished to promote space development despite intense business competition among aeronautics manufacturers. He said he expects a profiteering race could have the favorable effect of encouraging development of high-quality aeronautics products.

Mohri, the first Japanese scientist to be a member of a space shuttle laboratory research mission, said Japan should supply astronauts at least once every two years as "Japanese researchers have many good ideas and need to be aboard the space shuttle in order to verify them."

Export Controls of Weapons-Related Materials Studied

OW1711122492 Tokyo KYODO in English 1206 GMT
17 Nov 92

[Text] Tokyo, Nov. 17 KYODO—Japan is studying the possibility of controlling exports of materials that could

be used for the production of weapons of mass destruction, a senior official of the Ministry of International Trade and Industry (MITI) said Tuesday [17 November].

The official, who declined to be named, said such regulations, under what is known as the "catch all system," will become a global trend in the future. The Japanese plan calls for a ban on exports of materials capable of being used for military purposes to nations pursuing the development of weapons of mass destruction or countries involved in regional conflicts, the official said.

Such bans have already been enforced by the United States, Britain, and Germany. Japan has long banned exports of weapons.

Nuclear Fuel Firm Postpones Plant Construction

OW1611040792 Tokyo KYODO in English 0318 GMT 16 Nov 92

[Text] Aomori, Nov. 16 KYODO—The start of construction work on Japan's first nuclear fuel reprocessing facility, which was scheduled for last month, has been postponed until next March, according to a revised schedule request submitted Monday to the Science and Technology Agency.

The revised schedule request for the reprocessing plant construction is the fifth by Japan Nuclear Fuel Co., which manages the uranium enrichment and reprocessing facility in Rokkasho, Aomori Prefecture.

The delays, brought about by the need for safety inspections more rigorous than previously anticipated, have pushed schedules back by more than two years and consequently the entire facility will not become fully operational until after the year 2000.

The first round of safety checks of the reprocessing plant project was completed in August 1991. The Atomic Energy Commission and the Nuclear Safety Commission are currently proceeding with a second round of safety inspections.

If the inspections go well, an operator's authorization is expected to be issued by the government by the end of this year.

The reprocessing plant is the focus of the uranium enrichment facility being constructed at Rokkasho as part of Japan's program to meet future energy needs.

The plant would reprocess spent nuclear fuel from power plants throughout Japan to recover plutonium and usable uranium.

The plutonium would be used to fuel Japan's fast breeder reactors, which constitute a vital element of the government's nuclear power policies.

Since Japan does not have the facilities to reprocess its own spent nuclear fuel, the spent fuel currently has to be shipped to France and Britain for reprocessing.

Once the Rokkasho facility is fully operational, it is estimated that it will be capable of reprocessing some 800 tons of spent nuclear fuel annually, extracting 4.5 to 5 tons of plutonium, which is equivalent to about 60 percent of the nation's reprocessing requirements.

MALAYSIA

Opposition To Japanese Plutonium Shipment Planned

OW1711074292 Tokyo KYODO in English 0717 GMT 17 Nov 92

[Text] Kuala Lumpur, Nov. 17 KYODO—Malaysia will voice its concern over the dangers posed by Japan's shipment of highly radioactive plutonium at next month's meeting of the International Maritime Organization (IMO) in London, a top government official said Tuesday [17 November].

Malaysia, which has barred the ship from sailing in its territorial waters in the Strait of Malacca, also wants to discuss the safety in the congested waterway, which is prone to accidents and piracy, said Science, Technology and Environment Minister Law Hieng Ding.

"We will be sending our officials to the meeting and we will certainly be registering our concern about the shipment," he told reporters after opening a chemical conference.

The IMO's Maritime Safety Committee will meet next month to discuss Japan's shipment of one ton of reprocessed plutonium from France. The plutonium is being transported home by the freighter Akatsuki Maru with the route undisclosed for security reasons. Although all safety measures have been taken by Japan for the shipment, which has the blessing of the United States, several countries that lie along possible routes have barred the Akatsuki Maru from their waters to prevent the possibility of an accident.

Malaysia, Indonesia, and Singapore have already banned the freighter from their waters in the 800 kilometer-long strait, the shortest sea-lane from Europe to Japan. They cannot prevent the ship from sailing in international waters of the strait, however.

An IMO official said in Kuala Lumpur last week the 135-member maritime body can stop the Akatsuki Maru if member countries can convince it the plutonium shipment is unsafe.

The IMO, a United Nations agency that regulates worldwide shipping, has approved the shipment because it met all specified safety requirements.

Law said he is planning to meet Japan's ambassador to Malaysia soon to discuss the shipment, particularly the freighter's route home. Japan has assured countries the ship will stay clear of their respective 200 nautical-mile (370-kilometer) zones.

Japan plans to transport 30 tons of reprocessed plutonium from Europe over the next 20 years for its nuclear power program.

To promote safety in the Strait of Malacca, Malaysia has proposed imposing a toll on vessels plying the narrow waterway to pay for environmental cleanups and security patrols, but this has been opposed by shippers.

SOUTH KOREA

Koreas Fail To Agree on Nuclear Inspection

*SK1811062892 Seoul KBS-1 Radio Network in Korean
0605 GMT 18 Nov 92*

[Text] The North and the South today held the 10th meeting of the North-South Joint Nuclear Control Committee at Panmunjom.

With differences in the position on the Team Spirit exercise, the two sides failed to find points of agreement, however.

Accordingly, the two sides agreed to a contact on 27 November. At today's meeting, our side stressed that if the nuclear inspection is conducted before the North-South high-level talks next month by adopting nuclear inspection regulations at today's meeting, the next year's Team Spirit exercise may be suspended. The North side urged our side to officially announce the suspension [chungji] of the Team Spirit exercise by the end of this month even before the inspection regulations are adopted. As a result, the inspection regulations could not be even discussed.

ARGENTINA**Customs Office Stops Entry of Toxic Waste**

PY0611205492 Buenos Aires PAGINA/12 in Spanish
21 Oct 92 p 12

[Text] The Customs Office has prevented the entry into the country of 10,000 tons of toxic and radioactive waste and forced the ship to return to its place of origin. The Customs Office could not punish the importers, however, because the Toxic Waste Law that was approved by Congress has not been implemented yet. An official report released by the Customs Office states that the rejected cargo include everything from "nuclear and sewer" waste to "derivatives of solvents produced in plastic, rubber, and pharmaceutical product production." The communique says that part of the rejected cargo presumably came from "dismantled European military bases."

The report says that Buenos Aires port authorities began rejecting this kind of waste on 28 January when Decree 181/92, forbidding the entry of dangerous waste, became effective. The decree was approved following a scandalous attempt to import French excrement at the end of 1991.

The Customs Office has stated that the most important hazardous material exporting countries are the EEC, Canada, the United States, Brazil, Chile, and Paraguay. Custom officials refused to give details, but the public relations chief said authorities prevented the arrival of "materials with active uranium" from the EEC or the United States.

The Customs Office acted under Decree 181/92 because the Toxic Waste Law, which was approved by Congress in 1991, is still waiting for the executive branch to issue the appropriate regulations. The task is the responsibility of the presidency and the Economy Ministry.

CHILE**Government To Ratify Accord on Radioactive Material**

PY0411111292 Santiago Radio Cooperativa Network
in Spanish 2200 GMT 3 Nov 92

[Text] Late this week the government will submit to Congress the International Convention for the Physical Protection of Radioactive Material [Convencion Internacional Sobre Proteccion Fisica de Material Radioactivo] for ratification. This announcement was made by Foreign Minister Enrique Silva Cimma at the Chamber of Deputies session during which the Natural Resources Commission's report on the maritime transportation of plutonium from France to Japan was read.

Silva Cimma said the agreement on the physical protection of radioactive material was signed by Japan but never was ratified by Chile because the military government deemed that this agreement restricted the supply of components necessary for Chile's nuclear development:

[Begin recording] On behalf of the Chilean Government, I wish to point out that this is not its position and, therefore, it will submit to the honorable Chamber of Deputies the corresponding ratification of a convention that refers to an issue that concerns the honorable Chilean Congress because the Convention on the Physical Protection of Nuclear Material is the only one that, to some extent, regulates the transportation of plutonium. [end recording]

This agreement, according to Minister Silva Cimma, establishes consultation mechanisms between the signatory countries to guarantee safety measures for the transportation of plutonium.

Silva Cimma added that it has not been officially confirmed yet that the route around Cape Horn will be used by the Japanese ship transporting plutonium.

According to recent reports, the ship Akatsuki Maru has only just left Brest port, in France, for Cherbourg and will not start sailing to Japan until 11 or 12 November.

The Chamber of Deputies Natural Resources Commission report, which was read by Socialist Deputy Vladislav Kuzmich, mentions the lack of international regulations on the transportation of plutonium:

[Begin recording] If a nuclear accident involving a ship transporting plutonium were to take place, neither the Vienna Convention nor the Paris Convention on nuclear responsibility provides for adequate express international protection measures for the victims. The International Atomic Energy Agency acknowledged this deficiency in international law after the Chernobyl nuclear accident. No adequate agreements in this sense have been reached, however. Responsibility for the transportation of radioactive material is not foreseen in any law, therefore, the victims, be they countries or individuals, will not receive any remuneration. [end recording]

The Natural Resources Commission has recommended that President Patricio Aylwin be asked to inform the Japanese Government that Chile categorically rejects the maritime transportation of plutonium.

CUBA**Communique on Signing of Convention Banning CW**

PA1111042092 Havana Radio Havana Cuba in Spanish
0000 GMT 11 Nov 92

[Text] The Cuban Foreign Ministry issued communique on 10 November stating the government's decision to sign the convention on the prohibition, development, production, storage, use, and destruction of chemical weapons. The convention is being studied by the UN General Assembly.

In the communique, the Foreign Ministry stated that the decision was made after a careful analysis of the draft convention. It also referred to the island's firm stand in

support of any disarmament measure that will lead to the elimination of nuclear, chemical, and biological weapons.

The signing of the convention on the prohibition, development, production, storage, use, and destruction of chemical weapons will begin in January 1993.

PANAMA

Foreign Minister Bans Ship With Plutonium Cargo

PA1711020892 Panama City *CRITICA LIBRE*
in Spanish 16 Nov 92 p 10

["Note" from Foreign Minister Julio Linares to Gilberto Guardia, Panama Canal Commission, PCC, administrator, in Panama City on 11 November]

[Text] Note No. 983

Mr. Administrator:

I am pleased to address you to transmit the concern of the citizenry and this Foreign Ministry about the possibility the Japanese ship Akatsuki Maru—which left the military port of Cherbourg, France, with a cargo of 1.7 tons of radioactive plutonium en route to the Japanese port of Yokohama—may cross the Panama Canal with all the risks and dangers this represents for the population and the ecology in case an accident occurs.

Therefore, this Foreign Ministry considers it inconvenient and dangerous to authorize the Japanese ship to carry its high risk cargo through the waterway because it could cause catastrophic consequences in our country.

I hope the previous criteria is taken into account when considering the transit of ships which—due to their function, means of propulsion, weaponry, or cargo—represent a danger to the population, ecology, and the canal's facilities.

[Issued] Panama City, 11 November 1992

PARAGUAY

Missing Radioactive Elements Cause Concern

PY1611202192 Asuncion *NOTICIAS* in Spanish
16 Nov 92 pp 6, 7

[Excerpts] While toxic waste containers are being found in the Chaco, in Asuncion there are 107 radioactive sources [fuentes radioactivas] (cesium), some of which are believed to have disappeared from the Hospital for the Treatment of Cancer and Burns in the town of Aregua despite denials by Dr. Andrada, the director of the hospital. Dr. Andrada said that the radioactive sources are being kept in a bunker [preceding word in English] at the hospital. The Atomic Energy Commission, which is headquartered in Vienna, is concerned about this and has sent four experts to investigate.

The 107 radioactive sources are used in the treatment of cancer of the uterus. [passage omitted]

The cesium needles [agujas] were purchased in 1980 from the English company Amershan. They were originally stored at the Cancer Institute and some were lost while being transported to Aregua.

So far the needles have not been used.

If this situation is confirmed, it might pose a serious radioactive danger. This was one of the major concerns of the four experts who were sent by the Atomic Energy Commission of Vienna to our country in August 1991.

The experts tried to investigate the route followed by the cesium needles. They clashed with the secrecy of the members of the Atomic Energy Commission at that time, however.

The experts also tried to contact executive branch members, but again met with obstacles that prevented them from talking about the subject with valid government interlocutors.

The experts were sent to study the cases of Paraguay, Chernobyl, El Salvador, and Goiania. They sent their report to our Foreign Ministry in February 1992. In it they express concern about the situation in Paraguay in the area of radioactivity. [passage omitted]

ALGERIA

IAEA Assists Country's Nuclear Technology

93WP0021A Algiers EL WATAN in French
18 Oct 92 p 12

[Unattributed article: "Nuclear Technology: IAEA (International Atomic Energy Agency) Assistance"—first two paragraphs are EL WATAN introduction]

[Excerpts] The IAEA [International Atomic Energy Agency] governors council recently elected as its chairman the Algerian representative and Algerian ambassador to Austria, Mr. Ramdane Lamamra.

Observers agree that this election comes in recognition of Algeria's active role within the agency, and in recognition of its efforts in the field of scientific research and the peaceful use of atomic energy.

In 1963, Algeria joined the agency, which had been created six years before "to hasten the contribution of atom to peace, security, and prosperity throughout the world."

The agency's activities include monitoring technical nuclear safety efforts under a system of guarantees, radioprotection, as well as promotional activities geared to technical assistance and cooperation with developing countries.

The agency devotes some \$55 million per year to such assistance and technical cooperation. In this respect, Algeria has received \$3.5 million for scientific research during the period 1985-92. In 1993, it should receive \$750,000, designed for scientific research projects that are "highly considered" by experts.

The projects in question involve expert missions, study grants for engineers and technicians, hands-on training periods in the laboratories of industrial countries, equipment procurement, scientific and technical documentation, and information storage media.

Cooperation between Algeria and the IAEA was discussed at length during the last session of the agency's general assembly by the Algerian representative Mr. Lamamra, who emphasized Algeria's determination to attain, with the agency's help, a level of scientific and technological development high enough to enable it to use nuclear technology to the largest possible extent in fields as vital as health, agriculture, hydraulics, and energy.

Sea Water Desalination

As is known, two years ago, Algeria, Morocco, Tunisia, Libya, and Egypt submitted a request for assistance to the agency, concerning a feasibility study of nuclear desalination at selected North African sites.

A report on the subject was prepared by the agency jointly with the competent institutions of the countries concerned; it is expected to be submitted to the agency for approval by the end of this year. The report shows that North Africa currently has a shortage of 3 million

cubic meters [m^3] of water per day. This shortage will amount to 9 million m^3 per day by the year 2000.

It is estimated that, by then, it may be necessary to desalinate 50,000 to 720,000 m^3 per day at 15 potential sites. Three sites capable of processing about 120,000 m^3 per day are under consideration in a first stage; one of them might be located in the Mostaganem area. According to the report, the investments required to cover the water needs of these regions through desalination in the year 2000 amount to some \$30 billion.

As part of the agency's assistance, Algeria was given a pilot irradiation unit and training for its teachers, which enabled it to master the technique and to start setting up a foodstuff irradiation unit in the Mascara region. This unit will enable Algeria to reduce losses in storage and to bridge the gap between the two production periods (i.e., 20,000 tons per month). [passage omitted]

For the past two decades, Algeria has imported radioisotopes and radiopharmaceuticals to supply the needs of hospital nuclear medicine departments. A program was set up to make these products locally in order to improve nuclear medicine sources and to save foreign currency. In this context, some projects implemented with the Agency's help aim to produce locally radioisotopes and radiopharmaceutical kits for the diagnosis of hormonal diseases.

INDIA

Thorium Used as Fuel in Kakrapar Nuclear Plant

BK0911021692 Delhi INDIAN EXPRESS in English
31 Oct 92 p 3

[Text] Bombay—For the first time the Bhabha Atomic Research Centre (BARC) has tapped the vast thorium resources in the country by using it as fuel for the initial core of a Pressurised Heavy Water Reactor (PHWR) at the Kakrapar Atomic Power Station-I, which went critical recently.

Stating this in his Founder's Day address at the BARC complex at Trombay here on Friday, the BARC chairman Dr. R Chidambaram said that the thorium bundles used would help achieve an "efficient power-flattening".

He pointed out that the loading of thorium into the power reactor would give valuable experience in the large-scale handling of the substance "which is going to play a major role in the Indian nuclear power programme in the future."

Dr. Chidambaram said that BARC was designing an advanced heavy water reactor system where inherent safety was derived through in-built neutronic and thermal hydraulic characteristics. "In this reactor a major fraction of energy would be extracted from thorium with minimum consumption of the plutonium driver fuel", he explained.

In the context of improved safety designs, he said that an Advanced Channel Inspection System (BARCIS) had

been used in Pressure Heavy Water Reactors for in-service inspection of coolant channels enhancing the safety and reliability performance of the reactor.

A high-speed processing supercomputer has been made by BARC, using indigenous hardware. "The computer is one-fifth as fast as Cray and we are hoping to further increase the speed. This is a very significant breakthrough in the development of supercomputing systems and meets the high speed computing needs of scientists and engineers here and in other R&D [Research and Development] institutions in the country."

The development of an alternative to the power-pellet route in the form of the Sol-Gel-Microsphere Pelletisation process for the fabrication of nuclear fuel of oxide, monocarbide and mononitride has eliminated radioactive dust hazards, noted Dr. Chidambaram. He said that the process was highly suitable for remote and automated fabrication, thus bringing down the personnel radiation exposure to a minimum.

This year saw the commissioning of a 'Sludge Hygienisation Research Irradiator' at Baroda for the cleaning of city sewage sludge. The first project of its kind in the continent, the experimental nuclear sewage treatment plant will treat half the waste of Baroda Municipal Corporation at full capacity. Its efficacy will determine whether the project will be extended to other cities in the country.

The Centre has also developed an aerial gamma spectrometry system to assess the deposition and dispersion of radioactive material over wide areas. "The system was used by the Rajasthan Atomic Power Station and establishes our capability to quickly assess and map radioactive contamination over large areas," remarked Dr. Chidambaram.

Based on the technology provided by the BARC, he said that a few thyristor chopper systems for the control of electric multiple units (EMUs) of suburban trains had been fabricated and handed over to the Railways. The use of the equipment enables smooth and efficient speed control of suburban trains resulting in a saving of about 25 per cent—i.e. 66 million units of electricity per year by the Central Railways alone—of the total energy consumption.

Elaborating on the non-power applications of nuclear energy, Dr. Chidambaram said they had developed high-yielding varieties of ground-nut and black gram which had been released for cultivation in parts of Gujarat Maharashtra, Bihar and Madhya Pradesh.

Atomic Energy Commission chairman Dr. P. K. Iyengar, whose message on the occasion was read out, as he was held up in Delhi, urged scientists to innovate more modern methods to ensure economic growth.

"While scientists may not like to attach importance to the economic principles which influence social progress, we have to accept the fact that these changes ultimately

decide the pattern of growth and have a bearing on the development of science and technology itself," he observed.

He felt that scientists should not merely copy principles and experiences of other countries which, he said, often operated under totally different conditions.

Delegation To Visit Washington To Discuss NPT

BK1111085092 Delhi All India Radio Network in English 0245 GMT 11 Nov 92

[Text] An official delegation is leaving New Delhi for Washington today for bilateral discussions on nuclear nonproliferation [NPT]. The delegation will be led by Mr. C. Dasgupta, Additional Secretary in the Ministry of External Affairs. These talks are a part of the ongoing dialogue that was set in motion following a decision taken at a meeting between the prime minister, Mr. Narasimha Rao, and President Bush in February last. The Indian delegation will also make initial contact with officials in the Clinton transition team dealing with nuclear nonproliferation.

Daily Notes Achievements in Nuclear Field

BK1511133792 Delhi THE HINDUSTAN TIMES in English 31 Oct 92 p 11

[Text] BOMBAY, Oct. 30 (UNI)—Atomic Energy Commission Chairman Dr. Padmanabha Krishnagopal Iyengar today said that India was committed to establishing nuclear technology on a firm footing by transferring scientific innovations and technological improvements to human activity, whether it was in agriculture or industry.

Speaking at the founder's day function of the Bhabha Atomic Research Centre [BARC] here, Dr. Iyengar said that while scientists might not like to attach much importance to the economic principles which influenced social progress, the fact has to be accepted that these changes ultimately decide the pattern of growth and has a bearing on the development of science and technology itself.

He called upon the scientists to study these economic principles and innovate modern methods to ensure economic growth which took into account the limitations of society. "It is my view that this is indeed necessary," he added.

Dr. Iyengar was of the opinion that it was not proper to simply copy principles and experiences of far-away countries which operated under totally different conditions, mainly unlimited resources and less population.

He said last year had been very productive for the Atomic Energy Department with two nuclear power units—Narora two and Kakrapar one—going into operation. Kakrapar one, the latest of the 220 megawatt (energy) pressurised heavy water reactors, was completed in less than eight years time and the experience showed that this could be reduced even further. The completion of the reactor in a record time was also an

indication of the good work done by the Nuclear Power Corporation, BARC and participating industries.

Considerable progress had also been made in basic research areas such as synchrotron light sources at the Centre for Advanced Technology, Indore, the cyclotron facility at Calcutta and in a large number of facilities in BARC.

In new areas like cold fusion experiments had demonstrated the authenticity of the new effect which was now gaining acceptance worldwide. In biology and genetic engineering fields, he said it was necessary to innovate further to develop new techniques and their applications.

BARC director R. Chidambaram, paying glowing tributes to its founder Dr Homi Jehangir Bhabha, said that in the present international climate of technology control regimes the success of BARC and other units of the Department of Atomic Energy in nuclear technology and related fields remained one of the pillars of national strength.

Referring to the Kakrapar achievement, Dr Chidambaram said the thorium loading in the power reactor would give valuable experience on various aspects of large scale handling of thorium in the nuclear fuel cycle, which was going to play a major role in the Indian nuclear power programme in the future.

In the area of nuclear fuels, he said that BARC had developed solgel microsphere pelletisation process for the fabrication of nuclear fuel of oxide, monocarbide and mononitride, as an alternative to the conventional powerpellet route, eliminating radioactive dust hazards. It was also highly suitable for remote and automated fabrication. Besides, low temperature sintering could be carried out to bring down the cost of fuel fabrication, he added.

Dr Chidambaram said that several kilograms of high density uranium oxide pellets prepared by the novel pelletisation and sintering route at BARC had been examined at the nuclear fuel complex at Hyderabad and have been found suitable for use.

He said that BARC had initiated the fabrication of mixed uranium plutonium monocarbide fuel for the second core of the fast breeder test reactor at Kalpakam. The out-of-pile thermophysical data of this fuel, namely hot hardness, thermal conductivity and coefficient of thermal expansion had been evaluated upto 1500 degree Celsius and found to have excellent chemical compatibility.

Dr Chidambaram said that the fuel reprocessing plants at Trombay and Tarapur had been operating well with the newly developed electrochemical techniques, which had brought in innovative changes in the basic process with considerable cost benefit and other advantages. An engineering scale facility was being built to process the irradiated thorium elements and to separate uranium-233 formed in them to be used as nuclear fuel in future reactors, he added.

Nuclear Power Production Said Possible Without Aid

93WP0026A Bombay THE TIMES OF INDIA
in English 24 Oct 92 p 7

[Article by Vithal C. Nadkarni: "Nuclear Power is Still With Reach of India"]

[Text] Bombay, October 23. Changed geopolitical equations have ruined India's chances of expanding the nuclear power programme with Russian help. But the country is by no means in a hopeless position. With financial resourcefulness more than technological savvy, it can retrieve the situation.

In the footsteps of France, which recently baulked at supplying enriched uranium for the Tarapur Atomic Power Station to a non-NPT [Nuclear Proliferation Treaty] regime, Russia is having second thoughts about its turn-key project to supply a pair of 1,000 MW enriched uranium light water reactors at Kudankulam in Tamil Nadu.

The inter-governmental agreement for the Kudankulam project was signed with the erstwhile Soviet Union during President Gorbachov's visit to New Delhi 1988. It provided for a steady supply of enriched uranium and return of spent fuel.

What sweetened the deal for India was the soft loan of 3.2 billion roubles—worth Rs [Rupees] 5,000 crores then—at 2.5 per cent interest. This was to be repaid in 14 equal installments starting three years after commissioning the first Kudankulam unit in 1998. The foreign exchange outflow—imports of some components worth a few million dollars—was minimal since the plant was to be re-designed for tougher safety standards and was to be made with Indian manpower and facilities, payable in rupees.

The sweetener has turned sour in the economic crisis following the break-up of the Soviet Union. The Russians reportedly want to renegotiate the agreement to supply most components rather than a turn-key project. More important, they would like dollar repayments with higher rates of interest.

What are India's options under the circumstances? An inside source insisting on anonymity says, "Like Barkis, the character in David Copperfield, Boris (Yeltsin) may be 'willing.' But can he fulfil the partnership? Even if India accedes to the Russian demands, our problems will not necessarily end. With central authority gone, except for a large corporation like Atomach, the performance of their smaller companies, scattered across the former Soviet Union, is a big question mark."

The alternative is to build indigenously designed pressurised heavy water reactors. The design for 500 MW units is ready for implementation. The site can also take a quartet of proven 220 MW units. The main advantage of these reactors is that the fuel, natural uranium, moderated and cooled by heavy water, would be readily available within the country.

"The strategic and economic importance of such self-reliance cannot be over-emphasised," says one expert. "Nor does large-scale import of atomic fuel make financial sense for a country with a balance of payments problem," he adds, "particularly when it has domestic reserves 700 billion tonnes of coal equivalent in thorium and recycled uranium. By contrast, India's coal, gas and oil reserves together add up to 152 billion tonnes of coal equivalent."

The caveat is that the extraction of all that atomic energy depends on how successfully the country can meet the challenge of developing the entire three-state nuclear technology.

The do-it-yourself option, even at the first stage of extraction from natural uranium, places a massive financial burden on India. The investment at Kudankulam envisaged Rs 2,500 crores for two units of 220 MW or Rs 5,000 crores for two 500 MWs with a gestation period of six to seven years. At 1991-92 prices without escalation or interest during construction, this works out to Rs 30,000 per kilowatt.

Originally, Kudankulam accounted for Rs 6,494 crores, out of the total planned outlay of Rs 14,400 crores proposed for the 8th Plan. The goal was to set up a nuclear power capacity of 7700 MW by the year 2002. Even after leaving Kudankulam out, the Planning commission has agreed for an amount of Rs 4,119 crores. Even this sum has to be split between open market borrowings, internal resource generation by the Nuclear Power Corporation (NPC) and government equity which is barely Rs 619 crores.

At the time of setting up of NPC, the Indian government's commitment was for a debt to equity ratio of 1:1. The government has not been able to stick to this figure. The ratio is now as high as 4:1. This means the NPC has to borrow four rupees from the market by floating bonds for getting one rupee from the government as equity.

Public sector unit have few takers today, however, thanks to developments like the banking-shares scam. And borrowing from the open market at anything between 17 to 20 per cent is counterproductive for atomic power projects which have long gestation periods. The inhibiting factor is the high interest during construction which can jack up the total cost of the project by more than half.

Nor is the NPC like other public sector units. Given the nature of its operations, involving strategic material and high-tech which only the government has been able to sustain so far, the privatisation of atomic energy has certain in-built limitations.

One way out is to seek creative resource management like preferential equity participation from the public (without voting rights) and the other is to involve energy-strapped state governments or even private companies in a sort of assured power supply programme in exchange for equity.

Would all these problems be solved by signing the NPT and accepting full-scope safeguards? Not really. "The days of soft loans, especially for nuclear power, are gone," says one expert.

The best option then is to build reactors using India's own natural uranium. The only countries besides Canada which have the expertise are Korea, Argentina to some extent, and India.

That brings the country back to square one. Even after signing the patently discriminatory NPT—which puts the facilities of the weapons—have countries of pre-1969 vintage beyond the pale of inspection—India will still have to find the finance to pay its own home-grown technology. That is not such an insuperable task for a nation that has mastered the far more arduous technological path.

IRAN

'Propaganda' on Access to Nuclear Weapons Refuted

LD1511170392 Tehran IRNA in English 1621 GMT
15 Nov 92

[Excerpts] Tehran, Nov. 15. IRNA—Qatari ambassador to Iran, 'Ali 'Abdallah Zayd al-Mahmud, in a meeting with Iran's First Deputy Foreign Minister 'Ali-Mohammad Besharati here on Sunday, appreciated Iran's "positive" stand on regional developments. [passage omitted]

Besharati refuted the claim of the western mass media about Iran having access to nuclear weapons and said their propaganda would only sow seeds of discord among countries. [passage omitted]

IRAQ

UN Expert Reports Incineration of Mustard Gas Arsenal

NC0911165492 Paris AFP in English 1626 GMT
9 Nov 92

[Text] Manama, Nov. 9 (AFP)—Iraqi officials have begun incinerating their arsenal of mustard gas but it could take a year to eliminate all 500 tonnes of the deadly substance, U.N. expert Ron Manley said Monday.

Manley said the dangerous destruction process began in the past week after his team approved an incinerator for use at the former chemical weapons production complex at al-Muthanna, 130 kilometers (80 miles) northwest of Baghdad.

The British expert arrived in Bahrain Monday after a seven-day mission in Iraq to oversee the start of the incinerator, where he left other U.N. officials behind to monitor the destruction process.

Baghdad is required by the 1991 U.N. Gulf war resolutions to eliminate all its weapons of mass destruction.

The incinerator, which had been tested for several months, will be able to destroy about three or four tonnes of mustard gas each day, Manley said.

U.N. officials predict long delays in destroying bombs and shells where mustard gas has solidified inside. They expect to destroy only three or four mustard gas shells a day out of the 12,000 at al-Muthanna.

The destruction of an estimated 140 tonnes of nerve gas, a process which started in September, is continuing without problem, Manley said.

Saddam Said Hiding Scuds, CWs in Southern Palace

NC1511191992 (Clandestine) Voice of Rebellious Iraq in Arabic 1340 GMT 15 Nov 92

[Text] Saddam's regime continues its prevarication with the UN inspection teams. A few days ago, before the latest UN inspection team arrived in Baghdad, our reliable sources observed Saddam's mercenaries transporting an unspecified number of Scud missiles and other surface-to-surface missiles to (al-Barabi'iyah) to conceal them in the palace Saddam built on the grounds of (al-Barabi'iyah) park in al-Basrah Governorate.

Our sources also observed several trucks entering the palace grounds recently. Their cargo compartments were covered to hide what they were carrying. Information leaked [words indistinct] clearly indicating that the trucks were carrying chemical materials and internationally banned bombs which the regime frequently used against our people and neighboring Muslim nations.

ISRAEL

Peres Pledges To Sign Nonproliferation Convention

TA1711190492 Jerusalem Qol Yisra'el in English 1800 GMT 17 Nov 92

[Text] Foreign Minister Shim'on Peres says that Israel will be among the first countries in the world to sign the convention banning the spread of chemical weapons. The convention will be available for signature at UN Headquarters in New York from next January.

Answering a question in the Knesset, the foreign minister also said that a number of countries in the region, including Syria, Libya, and Iran, were continuing to develop and arm themselves with chemical weapons. He hoped the Arab states would also express readiness to inhere to the convention unconditionally.

PAKISTAN

UN Adopts Resolution on Nuclear-Free Zone

BK1311115092 Islamabad Radio Pakistan Network in English 1100 GMT 13 Nov 92

[Text] At the United Nations, the Pakistani proposal for establishing a nuclear-free zone in South Asia has been adopted by an overwhelming majority in the General Assembly's main committee. The draft, co-sponsored by

Bangladesh, received 117 votes in favor, 12 abstentions, and only India and Bhutan against. There was another big shift by France which supported the resolution, thus mounting pressure on India to accept the regional solution to nuclear nonproliferation. The committee also adopted another Pakistani draft co-sponsored by a record number of 80 countries that upholds the concept of regional disarmament in nuclear field. With the coming aboard of France, all the five nuclear-weapon powers now support the nuclear-weapon-free zone in South Asia, that is the concept of regional disarmament in the nuclear field. Diplomats regard as significant the switch in the position of France, saying it would have far-reaching implications on a series of proposals made by Pakistan to ensure that South Asia remains free of nuclear weapons. It also gave boost to Prime Minister Mohammad Nawaz Sharif's proposal for the establishment of a nonproliferation regime in South Asia.

Editorial on India's Rejection of Nuclear-Free Zone

BK1511101192 Karachi DAWN in English 15 Nov 92 p 15

[Editorial: "Denuclearising S. Asia"]

[Text] Among the many causes the United Nations has championed for long without producing any result is that of the establishment of a nuclear weapon free zone in South Asia. For the 19th year running, the world body adopted a resolution to that effect on Thursday. It is unlikely that anything tangible will come out of this move, too. The significant aspect of Thursday's vote was that the resolution was opposed by India, which would be the key member of the proposed denuclearised zone if it comes to be set up. Given the size of its territory, population, resources and military power, New Delhi can jeopardise the establishment of a nuclear-weapon-free zone in South Asia by simply withholding its consent and cooperation. It is a pity that India once again chose to be obdurate and adopt an obstructionist stand although it now finds itself totally isolated on the issue. Along with Bhutan, a virtual protege, India was the only one to vote against the draft.

New Delhi's non-cooperative stance on the nuclear-free zone issue is incongruous in a world that is moving towards disarmament, at least at the international level. Even earlier, there was little justification for rejecting the Pakistan-sponsored proposal in view of the fact that both the countries of the subcontinent could at no stage afford a nuclear confrontation. But, India insisted on linking up its security concern vis-a-vis Islamabad with its arms race with Beijing. The argument ran that since China posed a threat to India's security and was building nuclear weapons, India could not renounce its option to do the same.

Although this line of reasoning was never very valid, it carries even lesser weight today. That would explain why 14 member states decided to change their position and vote in favour of the resolution on Thursday. They had

abstained last year when a similar draft was put to vote. In the first place, China is now a signatory in the Nuclear Non-Proliferation Treaty which it was not until last year. This should reassure India that some kind of understanding on nuclear disarmament with Beijing is now possible and should be explored. Secondly, recognising the need for an integrated approach, Pakistan has proposed a conference to bring together India and Pakistan along with the US, Russia and China to discuss the nuclear issue in South Asia. This should allow all concerned states to discuss threadbare the question of denuclearising the region—that is, dismantling whatever nuclear capability India and Pakistan have managed to acquire.

In any case, the time has come for the countries of South Asia to seriously consider the establishment of a nuclear weapon-free zone. Similar zones have been set up in Latin America and Antarctica. With the thrust of the new world order towards demilitarisation, South Asia should not be left out of this very positive development—also because it has a crucial implications for the socio-economic uplift of this poverty-stricken region. It is up to India and Pakistan to provide the lead in the matter of nuclear disarmament in the region. In the new political environment of the post-cold war era, they can work towards an understanding on this question, before the nuclear military balance emerges as a key factor in their political equations.

SYRIA

New Arms Deal Reportedly Concluded With Russia

93AE0089Z London AL-HAYAH in Arabic 1 Nov 92
p 4

[Article from London: "\$2 Billion Arms Deal Between Russia and Syria"]

[Text] Western and Israeli defense sources recently revealed that they have information about a major new arms deal between Russia and Syria that was concluded earlier this year but was not announced at the time.

The sources say that this deal was the most important one so far concluded by the Russian Federation with a Middle Eastern country since the collapse of the Soviet Union and the succession of President Boris Yeltsin to power in Russia. It is also the first arms deal between Syria and the new Russian regime. It is worth mentioning that the last arms deal between the two sides was in the wake of the 1991 Gulf war and months before the collapse of the communist regime in Russia.

The information provided by the sources about this deal indicate that it is a practical continuation of the arms cooperation agreement that was concluded between the two countries immediately after the Gulf war. At that time, the agreement was estimated to be worth \$2 billion. The agreement included supplying the Syrian armed forces with more Mig-29 fighters, Sukhoi-24 and T-72 tanks and anti-aircraft medium-range SAM-11's and short-range SAM-13's.

No accurate information is available about the number of weapons Syria was supposed to have agreed upon with

Moscow in to the 1991 agreement. It is generally believed that the deal included 48 multipurpose MiG-29 fighters, 24 strategic offensive Sukhoi-24's, in addition to 300 T-72 tanks and an unspecified number of SAM-11's and SAM-13's.

As for the new arms deal reportedly agreed upon in the beginning of this year, there is information to the effect that Syria has acquired 24 additional MiG-29's, 12 new interceptive Sukhoi-27's, and 300 T-72/74 tanks in addition to new SAM-10's and SAM-16's.

The interesting thing about this deal is the kinds of weapons involved. If the information is true, Syria would be the first country to order the long-range Sukhoi-27 fighter, which is internationally considered to be the best in the world. This plane is equipped for interception, pursuit, and aerial combat in all altitudes and distances. It is characterized by its unparalleled ability for acceleration, ascent, and maneuvering. It is armed with 10 air-to-air short-range and long-range missiles. Its radar can detect and pursue enemy targets for up to 240 km. It can also deal with six targets simultaneously. The closest western competitor to this plane is the American F-15 Eagle, which is currently deployed in Saudi Arabia and Israel.

According to the Russians, SAM-10, the true Russian name of which is S-300, is their counterpart to the American made Patriot missile. In their opinion, it is even superior to the Patriot because it can be used as both an anti-aircraft and an antiballistic missile. Syria would be the only country other than Russia to have if the information is correct. SAM-16 is the top-of-the-line Russian-made shoulder-carried anti-aircraft missile. It is considered the Russian counterpart to the American Stinger missile.

The information available about the weapons that Syria is supposed to have according to the original estimates of these two deals corresponds to Syria's desire to modernize its armed forces, especially its Air Force and its armored vehicles. Syria's Air Force is currently using 48 MiG-29 fighters and 24 offensive Sukhoi-24 fighters that it acquired in deals with the then Soviet Union during the 1980's. It is also known that Syria originally wanted its armed forces to have about 120 MiG-29 fighters and 48 Sukhoi-24 fighters. As for the T-72/74 tanks, the Syrian Army currently has about 1,500, including 320 that were recently acquired from Czechoslovakia. This is in addition to Syria's plans to modernize its air defense systems. Such an objective can be realized after it obtains the new SAM-10's, 11's, 13's, and 16's.

As a result of this deal and the 1991 deal, Syria would be in a position to realize such goals. These two deals would bring the number of MiG-29's in Syria to 120 and the number of Sukhoi-24's to 48. This is in addition to the Syrian armed forces acquiring Sukhoi-27's for the first time. The number of tanks the Syrian Army will have will be as high as 3,260.

It is not yet known when Syria will obtain these new Russian weapons, but it is expected that they will obtain them by the new year.

CIS States To Discuss Nuclear Weapons Handover

PM1811160192 Moscow KRASNAYA ZVEZDA
in Russian 18 Nov 92 p 1

[Article by Lieutenant Colonel Anatoliy Dokuchayev: "Strategic Forces Personnel Is Being Defined More Precisely. But Some People Would Like To Deal in Warheads"]

[Text] In December in Minsk at the meeting of the heads of the CIS states the question of the strategic forces or to be more precise the nuclear weapons of the former USSR will be among the most important again. So the examination of a question which perturbs the world community has dragged on since the moment the CIS was created.

The joint work in which there have been ups and downs led in May to the meeting in Lisbon, where it was determined that only one state—Russia—would be a nuclear state on the territory of the former USSR. As they say, there should be no problems in the nuclear question, but....

At a recent press conference devoted to the results of the last session of the Council of Defense Ministers, journalists from many Western mass media plied Lieutenant General Valeriy Manilov, press secretary of the commander-in-chief of the joint armed forces, with questions: Does the High Command have control if Kiev is suggesting to Moscow that it buy nuclear warheads like tomatoes or cucumbers?

The questions were provoked by two circumstances—the publication in the press of Ukraine's intention to obtain a goodish sum for the nuclear warheads and the Defense Minister Council's 4 November examination of the draft agreement on the strategic forces.

The new document concerning the strategic forces could do away with many questions. But it was not initialed by the delegation which arrived from Kiev. Nor was it signed by the Russian representatives. Although, as Lieutenant General Andrey Nikolayev, head of the Russian delegation at the Defense Ministers Council, told me in a conversation, not for reasons of principle but for purely technical reasons—"the draft is unfinished."

The absence of the signatures of the two most economically and militarily powerful CIS countries, albeit only at the preliminary stage, says a lot. But the world community and the citizens of the CIS countries are even more worried by something else—these two states' practical steps.

Having stated its readiness to withdraw the nuclear arsenal from its territory by the end of 1994, Ukraine has in practice established administrative control over this arsenal. In contravention of the agreements which have been signed the process of the taking of the Ukrainian oath has begun in the strategic nuclear forces. Understandably, in this situation it is impossible to ensure effective control either from the High Command of the

CIS Joint Armed Forces or from Russia, as the only CIS state with the status of a nuclear power, over the technical state and nuclear safety of the strategic nuclear forces on Ukrainian territory.

Now there is Kiev's new step, which will hardly lead to an improvement of the situation. Now, to judge by the statement of officials in the Ukrainian Government, Ukraine would like to obtain substantial sums for the nuclear weapons which should be removed to Russia. It is a case of the RS-18 and RS-22 missiles and 1,280 warheads for them. I think that the Russian structures concerned with nuclear weapons are hardly prepared to accept such terms. There is another perturbing aspect. As we know, in addition to warheads for ground-based missile complexes, there are 600 nuclear munitions for long-range aircraft on Ukrainian territory.

What lies behind the reluctance to agree to the redeployment of 600 nuclear aircraft munitions. Does Ukraine intend to become a nuclear power? It would seem not. Ukraine's nuclear-free status was confirmed yet again by Leonid Kravchuk in a recent telephone conversation with newly elected U.S. President Bill Clinton. Nonetheless, Ukraine as of today is in practice a nuclear power—the sixth on the planet. If the ground-based nuclear forces are still controlled by the Russian strategic forces staff and the Joint Armed Forces High Command, as we can see the aircraft forces are not. The result is that Ukraine has 600 nuclear warheads and, which is also important, it has delivery vehicles—the super long-range Tu-95M and Tu-160 bombers (the latter an aircraft of the latest modification). That is how matters really stand.

In my view Russia's role in the "nuclear issue" is also inconsistent. The decision to withdraw nuclear weapons from Ukraine to Russian territory was backed up by Kiev's commitments (the signatures of the president and other officials). But later Ukraine, interpreting in its own way many of the documents' provisions, began to haggle to obtain for itself substantial compensation for the nuclear weapons. Russia "took the bait." In particular Aleksandr Kotenkov, chief of the Russian Federation president's state-legal administration, publicly stated at a meeting of the heads of state in Bishkek that Russia plans to remove nuclear missiles from combat duty and to store their warheads on Ukrainian territory until the question of their removal to Russia for destruction has been resolved. We are offering compensation for the cost of the nuclear missiles' warheads.

Uncertainty also arises from the following point. In Bishkek the heads of state imposed the duties of commander of the strategic forces on Marshal Shaposhnikov. De jure he controls all strategic weapons. But in fact? I think that is why Kiev likes, not without cause, to resort at any forum to the following phrases: "Ukraine must guarantee to the world that the nuclear weapons on its territory will not be used at the will of another state."

In brief, there are many problems with the USSR's nuclear legacy. Their solution, in the opinion of experts, could involve three options.

First option. Suggested by the Joint Armed Forces High Command. At a scientific and practical conference devoted to problems of collective military security, Aviation Marshal Yevgeniy Shaposhnikov stated that the CIS is not a state and the nuclear weapons, as the most important component of the armed forces, must without question be owned by a state. It would be logical and natural from the viewpoint of international treaties and agreements signed in the CIS to have the command of the strategic forces in the Russian Federation—the sole heir to the USSR's nuclear status. The terms for creating this command should be ensured by Russia's treaties with the other three CIS states [where nuclear weapons are deployed—FBIS]—the treaties on the status of the strategic forces, the procedure for their control, their all-around backup, and schedule for withdrawal to Russian territory. In that case the control of the strategic forces would be exercised by the Russian Federation Defense Ministry with the direct participation of the commander in chief of the CIS Joint Armed Forces—as long as these weapons are on the territory of the four states.

Second option. Nuclear weapons belong to Russia and are controlled by it—without the Joint Armed Forces High Command. In that case Russia will have to introduce amendments to the treaty with Belarus on the coordination of activity in the military field and to the 20 July 1992 agreement on the strategic forces (they note that the system of control of the strategic forces temporarily deployed on Belarus' territory is a component of the system of control of the CIS Joint Armed Forces Strategic Forces). That is, today Minsk has delegated the right of control over nuclear weapons and their use to the Joint Armed Forces high command, which is under its control.

Russia has also to renounce the commitments given at the meeting of the presidents of the Russian Federation and Kazakhstan in Kokchetav.

Third option. If the two first options are rejected by Ukraine and Kazakhstan (Belarus, having determined the status of "its own" weapons, is not threatened with this) it will be necessary to declare the weapons their own property and all ensuing consequences under international law.

In reality the situation is developing along the first path. It is also the most acceptable, if you discount the ambitions of some politicians and their desire to use nuclear weapons as a trump card in the political and economic game.

Commentary on Russian-U.S. Arms Reductions

*LD131121192 Moscow Radio Moscow World Service
in English 1910 GMT 13 Nov 92*

[Commentary by Vladislav Kozyakov]

[Text] President-elect of the United States, Bill Clinton, has named further cutbacks of nuclear and other weapons among top priorities of the American foreign

policy. He believes this must be done in conformity with the end of the cold war brought about by the collapse of the Soviet Union, as well as the reforming of the Russian Army and the Strategic Arms Limitation Treaty. Here is a commentary by Vladislav Kozyakov.

This trend in the policy of the United States for the next four years stems from the strategy announced even before the presidential election and based on the assumption that the international standing of a country is largely determined by the success of its domestic economy. Such an approach correlates with similar tendencies manifest in many countries. Significantly, the former adversaries, the United States and Russia, together with the rest of the Commonwealth of Independent States, emerging to replace the former Soviet Union, are now acting like partners, with Washington even lagging behind in the reduction of armed forces and armaments and their transfer within the national borders.

Of course, the process of dismantling the huge military machines created for decades has its own peculiarities in every single country and involves problems both material and ethical. But Russia and other CIS republics have been cutting their production of weapons at a faster speed than the United States. For instance, Russia has slashed its military expenditures by 70 percent recently. As for the war industry, no other country in the world has had such a drop in the production of military equipment as Russia had in 1992. The Defense Ministry's orders for ammunition and hardware came down by 70 percent. Addressing a news conference in Moscow on Thursday, the First Deputy Defense Minister, Andrey Kokoshin, said we ordered, for example, only 20 tanks last year. We did not order any self-propelled guns at all and orders for new rockets can be counted in single digits.

Against the backdrop of such statements by the Russian military department, it's strange to hear the American Defense Secretary, Dick Cheney, say that the United States should be careful in harvesting the peace dividends, as well as his warnings that economic shambles and warring factions in the former Soviet republics can quickly destabilize the region. According to him, the next four years will be more challenging in foreign policy than the previous one. A question arises whether the Pentagon really regards local conflicts on ethnic grounds underway in the other hemisphere as a serious reason for restarting the arms race. No matter how alarming today's reports from the CIS member-countries may be, they cannot provide reason enough for holding up the reduction of nuclear and conventional weapons. Officials in Moscow hope this process will continue on the basis of fruitful interaction between Russia and the United States.

Commentary Cites Asian States' Nuclear Policies

*LD0711173092 Moscow Radio Moscow World Service
in English 1210 GMT 7 Nov 92*

[Commentary by Aleksey Kondratyev]

[Text] Amid reports about nuclear ambitions by a number of Asian countries, two opposite trends seem to be under way in the continent in the sphere of nuclear policies. We follow with a commentary by Aleksey Kondratyev.

On the one hand, steps are being taken to reduce the number of nuclear weapons. Russia for one has ratified and is already taking measures to cut the number of long range nuclear weapons under the Russian-American Strategic Arms Reduction Treaty. Moscow has also announced its nuclear weapons were no longer targeted on Asian countries and has extended its moratorium on nuclear testing. Three other former Soviet republics including Kazakhstan agreed on the transfer and subsequent elimination of former Soviet tactical weapons on Russian territory.

As an encouraging sign China joins the Non-Proliferation Treaty and the Americans have withdrawn their nuclear weapons from South Korea. But, on the other hand, as if in a show of rivalry, two Asian giants, India and Pakistan, have both spoken of their ability to produce nuclear weapons. There are also reports about Iran's intention to join the ranks of nuclear powers in five to eight years from now and speculations are under way that Tehran has already begun its own nuclear program.

Despite the agreement with Seoul, Pyongyang is still reluctant to open up its nuclear installations for mutual inspection. For its part Israel is believed to be in possession of 100 nuclear bombs and does not want to curtail its nuclear program. Such are the realities of today and there is growing concern about a possible spread of nuclear weapons in Asia.

India is unwilling to join the Non-proliferation Treaty on the grounds that it is unjust and discriminatory towards the non nuclear countries. For the same reason, Delhi is opposed to the idea of denuclearizing South Asia. It and other Asian countries ambitious to have their own nuclear weapons bring up what they think (are) strong enough arguments to support their case but the fact is Asia is in the face of widespread nuclear proliferation on the continent.

Is there a way out? One way of redressing the lamentable situation is to improve (the) international environment including Asia's and a recent move by President Nazarbayev of Kazakhstan for a regional conference on confidence building measures in Asia merits attention. Among other things such a forum may well discuss the problem of non proliferation in the continent, something that no one but the Asian countries themselves will be able to resolve.

Russian, European Nuclear Physicists Cooperate

LD1711195892 Moscow *ITAR-TASS in English*
1734 GMT 17 Nov 92

[By ITAR-TASS correspondent Yevgeniy Molchanov]

[Text] Dubna, the Moscow region, November 17 TASS—Despite a number of financial limits, cooperation between the Russian United Nuclear Research Institute and the European Organization for Nuclear Research (CERN) is rather active, the CERN general director told a meeting of the joint coordination committee.

Dubna is a participant in seven experiments on major accelerators, the elaboration of projects of new joint research and holding of international scientific schools.

In addition, a large group of scientists from Russia and foreign scientific centers, which are members of the international organization, is now working in the Geneva CERN headquarters.

Russia Approves Nuclear Safety Accord With Norway

OW1611184692 Moscow *INTERFAX in English*
1731 GMT 16 Nov 92

[Transmitted via KYODO]

[Text] The Russian government has approved a draft of an agreement with Norway on the operative notification of nuclear accidents and on the exchange of information on nuclear power plants. The draft was presented by the ministries of foreign affairs and atomic energy.

INTERFAX learned that the document stipulates immediate mutual notification in the event of any accident in nuclear power plants, ship reactors, and unfinished atomic fuel depositories.

If the agreement is signed, the two sides plan to notify one another of any incidents which could lead to radioactive fallout across their border, or if an exceptionally high level of radiation is registered in either Russia or Norway. At least once a year representatives of the two countries will transfer information to one another on the procedures for operating atomic reactors, as well as technical information which might be used to assess the consequences of accidents at nuclear plants.

According to the text, Norway wants to receive information on nuclear plants located within 300 km of the state borders of Russia, Finland, and Norway—or on the territory of the Karelia, Leningrad, Murmansk, and Kalingrad regions.

Russian Foreign Affairs Minister Andrey Kozyrev has been instructed to sign the agreement during his visit to Norway, which is planned for January, 1993.

Russian CBW Aide Interviewed on Secrecy Rules

PM1311121392 Moscow *ROSSIYSKAYA GAZETA*
in Russian 11 Nov 92 First Edition p 4

[Interview with Anatoliy Kuntsevich, chairman of the presidential Committee for Chemical and Biological Weapons Convention Problems, by Mikhail Gusev: "Unprotected State Secrets. They Must Be Kept, of Course. But on a Legal Basis"]

[Text] Two doctors of chemical sciences wrote an article about chemical weapons. A month later they were hauled off to the Russian Federation Security Ministry investigation administration, their apartments having first been searched. One was released, having been named as a witness, while the other was left in the cell, criminal action having been taken against him under the once very popular but now half-forgotten article of the Criminal Code penalizing the disclosure of state secrets.

There used to be more secrets. The article was well used. As the younger sister of the article on high treason, it was liked because it regularly came to the aid of the Kremlin and its branches in the provinces. The article ranged far and wide. Everyone went around in its shadow. Many were directly affected.

Amid the clamor of the reform the article was forgotten. Perhaps because Russia does not have at the moment an actual law on secrecy and the protection of secrecy. But doctor of chemistry Vil Mirzayanov ended up in Lefortovo, albeit briefly, accused of "divulging information that constitutes a state secret," because the doctor is an "individual who was entrusted with this information or acquired it as part of his job." "Given the absence of any evidence of high treason or espionage, is punishable by two-five years' imprisonment." Unless there are serious repercussions. In which case, he could get as many as eight. Article 75 of the RSFSR Criminal Code is severe. For 32 years it has been severe.

Those "rewarded" under the article have always had a turbulent press. They have been pilloried (sometimes hounded to the courts), as a warning to compatriots (be vigilant!). The case of Dr. Mirzayanov, who fell foul of Article 75 not during the stagnation period, but on the road to democracy, is guaranteed greater popularity than it would have had in the past.

The main antihero of the Mirzayanov-Fedorov "Poisoned Politics" in MOSKOVSKIYE NOVOSTI was Mr. X. That is what the authors call him for the sake of the story. But at the end they reveal that Mr. X is Anatoliy Kuntsevich. He is a lieutenant general and an academician. He serves as chairman of the presidential Committee on Chemical and Biological Weapons Convention Problems. The hero of the article has apparently not yet said a word. But in our pluralistic times this is frowned on.

So let us hear what Anatoliy Kuntsevich has to say about the scandal.

[Kuntsevich] This is how the story goes. An article by Mirzayanov and Fedorov was published on 17 September in the Baltimore SUN. Three days later an expanded version appeared in MOSKOVSKIYE NOVOSTI. Already there was a Baltimore SUN correspondent in my office asking for my opinion of an article I had not yet seen. I gave him an interview, but he did not ask for my evidence. The scandal which the authors were apparently expecting did not break in the West.

A few days later I met with journalists in the United States and not one asked me about the bombshell the article's authors had allegedly detonated. In my opinion, everyone realized it was a mere bubble. If not a provocation, then a clumsy attempt to discredit Russia by showing that it had broken its pledge not to produce chemical weapons.

Indeed, in 1987 the USSR announced that it was stopping production of chemical weapons. The stock of 40,000 tons of chemical agents that we declared at the time has not increased. Not a single carload of chemical agents has arrived at any army dump. It will all be presented for international inspection at the prescribed time.

The statements that Russia is violating its international commitments are an attempt to discredit its leadership's political course. But Russia stands innocent before the world community.

As for developments in the sphere of offensive chemical weapons programs, no treaty since 1925 has banned them. Nor is there a taboo on scientific research and trials in this sphere. Russia has not made any unilateral commitments to that effect.

Military chemical work, like all other defense work, has special status. Each department engaged in weapons development creates certain norms to protect secrecy. Nor does democracy, even U.S. democracy, expect national assets and military, industrial, scientific, and commercial secrets to be sold off.

[Gusev] In your view, what is secret about the data published by the authors of the article in MOSKOVSKIYE NOVOSTI?

[Kuntsevich] I am no legal expert. But it is possible that merely by publicly announcing that a particular institute was working on chemical agents one is divulging a state secret. Particularly when we and the Americans have not yet exchanged data on the structure of facilities developing chemical weapons. Then an employee of the institute, having signed a pledge not to divulge the nature of his activities either during employment or after he has left, suddenly tells the whole world about it....

[Gusev] Who was the aggrieved party who applied for criminal action to be taken against the authors of the article?

[Khuntsevich] It was not us. In our committee's view, the activities currently performed by various departments in this sphere are not legally prohibited. So the committee does not supervise this work. It will only come under our purview once the convention banning it has been ratified and comes into effect.

[Gusev] When will that finally happen?

[Khuntsevich] Work on it has not yet been completed, and the UN General Assembly is elaborating a resolution approving it. The initial signing is planned to take place in Paris in January, after which it will go to the states for examination and ratification. From past experience of

conventions of this size, it will be an interval of some years between examination and ratification. One can expect the convention to come into effect for the bulk of the participants in approximately 1995.

[Gusev] I am clear on development. But tell me, are chemical weapons tests permitted at the moment?

[Khuntsevich] Yes. Until very recently it was even supposed that any state participating in the convention, in view of the uncertain situation in the world and by virtue of the fact that not all states would be signing it, could keep a certain quantity of chemical agents. It was proposed by France. The French also proposed that countries should be allowed to improve this so-called security stock. The Americans backed the French proposal, incidentally. It took a firm stance by Russia and other states to persuade everyone that if we are going to have a global ban it must be truly global.

But the convention is not stopping science in the sphere of physiologically active, highly toxic chemical compounds. Basic research in this area is resulting in highly effective medicines and growth stimulators. Every laboratory will be allowed to synthesize 100 kilograms of agents with highly toxic properties annually. So the activities of an institute like the State Union Scientific Research Institute of Organic Chemistry and Technology, which for some reason the authors describe as a "charade," will not be banned under the terms of the convention. Moreover, each country is allowed to produce one tonne of various types of chemical agents per year at one small facility. In the event of unforeseen circumstances, for the purpose of training forces, and for programs to create protection agents.

[Gusev] So were tests of binary weapons carried out, as the authors claim, in the vicinity of Nukus or not? Even if they are permitted under international norms...

[Kuntsevich] That is not a question for me either. But I do not think there could have been any tests in Nukus in 1991-1992. The Defense Ministry would be able to provide a precise answer on that one.

[Gusev] It is true that Russia has already essentially failed to meet the deadline for starting to destroy chemical arsenals, specified by the accords with the Americans?

[Kuntsevich] They have not concluded any treaty as yet. When our president met with the U.S. President an understanding was reached: The treaty that had been drawn up between the USSR and the United States required adjustment. Russia is now reworking the program for the destruction of chemical weapons, since the old one, from the USSR era, was not approved by the Union parliament.

[Gusev] But why is the "Union" program not suitable today? There is no Union, but there is a program....

[Kuntsevich] Because we cannot afford it now in that form and on that scale. That very expensive program was

a "Union" program, and it turned into a Russian program: The former brothers and sisters in arms are reluctant to cough up the money. Although, in fairness, they should. Do you know, an officer leaving Poland, the Baltic area or other places does not know where he is going to be quartered in Russia and how he is going to feed his family. But you must see that the money—something for the unemployed officer, something for disarmament—comes out of the same pocket. So our committee proposed that there be a stage-by-stage destruction of weapons rather than a large-scale program. The president agreed with us and issued a directive endorsing our approach. It was made law by a Supreme Soviet edict and government instruction.

[Gusev] But will these adjustments, which are logical from our viewpoint, be acceptable to the Americans?

[Kuntsevich] They are acceptable. We will probably start the destruction process in 1997. The Supreme Soviet will have to provide the finance for it. At stage one we plan to destroy 43 percent of the military-chemical arsenals. If the funding is reduced we will be forced to cut this percentage and thus make the destruction process even longer. Which is also economically inadvisable: If we have to spend 20 years on this dangerous work it will simply ruin us.

[Gusev] But are we technologically prepared?

[Kuntsevich] Yes, the program now incorporates technologies that are perfectly viable. We have primary and alternative versions. We will match them to the specific site where the destruction is to take place and consult the public.

[Gusev] The big question is has it been decided where the chemical agents are to be destroyed?

[Kuntsevich] Yes. For the first stage we have designated Gornyy in Saratov Oblast and Kambarka in Udmurtia. We store large volumes of chemical agents there. It will be cheaper and safer not to transport them, but to render them harmless on the spot. We are also considering the option of arranging for the destruction of the plants that used to produce chemical weapons.

[Gusev] Who are you, Mr. X?

[Kuntsevich] I was in charge of the institute in Shikhany for 10 years and it would be ridiculous to deny that I had anything to do with the arms development program. I make no secret of it. But history will discover what kind of weapons I was involved in creating. But it is unlikely to discover everything. I do not think that in the next few years we and the Americans are going to reveal to one another all the types of work we were engaged in. This may happen in time. Archives will be opened up, documents will be declassified. Then I will write my memoirs.... [Kuntsevich ends]

The lieutenant general knows, of course, whether or not tests were carried out at the test site near Nukus, where they spent many years working on biological recipes for death. He cannot, he need not know about all the

military-chemical events in Russia. I have no doubt that an academician who spent his whole life as an army scientist serving the system would have no problem deciding whether the information that has been divulged is secret. He also probably knows by heart the departmental instructions infringed by the authors. Such as the rules. Such as the formula for mustard gas.

But there was something else in Anatoliy Kuntsevich's answers that was worrying. Here it is: "Each department... creates certain norms." Let it create—that is work. But norms have to be legalized. Laws, as is known, are adopted by the supreme legislative authority. Instructions, written undertakings, and warrants must also derive from the law.

But we do not have a law on secrecy, which would simply define what a secret is. Equally, we do not have a public list of information that is secret. But there is the article of the Criminal Code for such occasions—the product of departments that are protecting their own peace and quiet rather than secrecy.

Although there is also the president's decree on the protection of secrets. Its essential purpose is to temporarily use "previously adopted normative acts on this subject." But they were adopted on all occasions and for no reason at all: In order to conceal the grim statistics of infant mortality, the horrendous level of work-related diseases, and so on.

Are we actually going to use these norms in the future?

The Supreme Soviet and the president, who, in accordance with the constitution, is supposed to submit the draft law on state secrets to the Supreme Soviet, must speak their piece.

Russia's Kokoshin Remarks on Missile Forces

*PM1311215192 Moscow KRASNAYA ZVEZDA
in Russian 14 Nov 92 p 1*

[Report by Lieutenant Colonel Yuriy Mamchur and Major Aleksandr Dolinin: "Russia Will Keep Its Nuclear Shield. And It Will Be Reliable Enough"]

[Text] "A turning point has been reached in the development of our strategic nuclear forces. Work is being done to seek their optimum composition and structure." Andrey Kokoshin, Russian Federation first deputy defense minister, declared during a visit to the Rezhitsa Red Banner Guards' Division of the Strategic Rocket Forces.

The breakup of the USSR and the emergence of a number of independent states have led not only to the dismemberment of the nuclear deterrent force but also to the breaking off of many collaborative ties in industry relating to the production of arms and military hardware. The economic crisis and the sharp drop in defense spending in 1992 are putting missilemen in still more difficult conditions. In addition, new international accords are coming into force in respect of nuclear weapons—the Treaty on Strategic Offensive Arms and

the framework agreements. All this is happening with Russia in a new geopolitical position and in a changed international and military-political situation.

"These facts demand an in-depth revision of many previous approaches and a careful assessment of all our resources—both technical and economic," Kokoshin said. "We are standing on the threshold of major decisions with regard to precisely which systems we will adopt, which ones we will develop and modernize further, and which ones we will eliminate. To this end a series of meetings has been held with general designers of missile hardware and employees of a number of leading scientific research institutes. Now we have come to this division, where we wanted to ascertain for ourselves a whole number of important nuances."

The Rezhitsa Division was certainly not chosen by chance. It reflects the present state of the Strategic Rocket Forces—the basis of Russia's strategic nuclear forces. Some regiments are performing combat duty, others are disarming and participating in elimination measures. Experiments to extract the launch silos by means of a directed explosion have been conducted successfully on the basis of just this combined unit—of which our newspaper has already written.

On the whole, the combat collective is living in expectation of changes, new hardware, and a new staff-organizational structure. What will happen to the division in the next two or three years? The "hundreds," as the MR UR-100 missiles are customarily called, will gradually be replaced by RS-12M's—the so-called Topols based on mobile launchers—which is entirely in keeping with the policy of modernizing missile armaments. A significant role in the adoption of this decision was played by the fact that it is exponentially cheaper to put the Topols on combat duty than stationary complexes. This does not mean that the latter are being abandoned altogether: In time the optimum combination of both will be found.

During the work, the meetings, and the talks the missilemen described and showed to those present, including a large group of journalists, maybe for the first time, much of what had previously been kept under seven seals, as the saying goes. Including a mobile alternate command post and a launch silo. The first deputy defense minister and the commander in chief of the Strategic Rocket Forces also visited the secret compartment where the first and second members of the command post's combat crew "keep their finger on the button"—perform intensive, continuous duty, in a constant waiting regime.

Much has been written and spoken about the incredible responsibility and the nervous and physical loads which fall to the lot of missilemen. Alas, as Major General A. Gribov, the division commander, said, they have recently increased still further. Units are as much as 25-percent undermanned in terms of soldiers and sergeants. As everywhere, there is a shortage of housing, and galloping prices hit at officers' empty pockets. Despite all

this, missilemen still set an example of professionalism, competence, and selfless fulfillment of military duty. Kokoshin also pointed this out after meeting with the division's officers.

Among the complex and frequently pointed questions addressed to the first deputy defense minister, to A. Piskunov, deputy chairman of the Russian Federation Supreme Soviet Defense and Security Committee, and to Colonel Gen. I. Sergeyev, commander in chief of the Strategic Rocket Forces, there was this one: Will "wholesale" conversion not affect the interests of the troops' combat readiness? What is seen as a sensible limit on the reduction of strategic offensive arms?

We believe that these questions are of concern not only to missilemen but also to all Russians who are not indifferent about the homeland's destiny.

The chief criterion for the extent of the reduction of strategic offensive arms is the availability of the quantity and quality of nuclear means which will not leave any side with even the hypothetical possibility of making a preemptive strike which cannot be answered. Kokoshin pointed out. As regards the pace of the reduction, it must correspond to the actual state of the nuclear deterrent force and to the country's economic potential. For the purpose of selecting the optimum path an in-depth comparative analysis is being made of all options for the development of the strategic nuclear forces. Account has to be taken of the fact that their existing model has to a considerable extent exhausted itself, and many arms systems have virtually ended their life cycle. Policy in the sphere of research and development is determined on the this basis.

In any case there is to be a sharp reduction in the number of types of missiles—which will considerably simplify their operation. One of the chief priorities will be the development of a battle management and communications system. The enhancement of their reliability and operational efficiency is far more effective and economically advantageous than the creation of new means of destruction. Considerable attention will also be devoted to enhancing the protection of launchers and other vitally important facilities against acts of terrorism.

Despite the destruction of collaborative ties caused by the breakup of the Soviet Union, Russian industry is capable of producing everything necessary for the nuclear deterrent force, the first deputy defense minister emphasized. This does not mean that we are abandoning cooperation with other CIS states when this meets the interests of Russia's security and mutual interests, however. The Strategic Rocket Forces grouping and our nuclear forces as a whole will be developed with due regard for our international obligations. But above all, of course, the interests of strategic stability will be taken into account.

Unenriched Uranium-238 Reportedly Sold in Grozny

LD1411190592 Moscow Mayak Radio Network in Russian 1547 GMT 14 Nov 92

[Text] Quoting the newspaper SEVERNYY KAVKAZ, which in turn quotes the Grozny newspaper INFORMATIKA I ZHIZN, the NEGA agency says three Russian citizens offered a quantity of unenriched uranium-238 for sale outside the National Bank in central Grozny. The uranium was brought in from Udmurtia on the back of a covered Kamaz truck and was estimated to be worth 280 million rubles. That was the amount paid by the buyers from Azerbaijan. According to the newspaper, the uranium will be sold to Iran, where at least \$15 million will be paid for it. It is, of course, difficult to judge whether this information can be trusted, but the world is full of rumors.

Ukraine's Kravchuk on Nuclear-Free Status

OW1711185992 Moscow INTERFAX in English 1835 GMT 17 Nov 92

[Report by Andrey Pershin, Andrey Petrovsky, and Vladimir Shishlin; edited by Boris Grishchenko; from the "Presidential Bulletin" feature—transmitted via KYODO]

[Text] Ukrainian President Leonid Kravchuk yesterday told John Shalikashvili, supreme commander-in-chief, NATO Allied Command Europe, and commander-in-chief, USAREUR, that having removed nuclear weapons from Ukrainian territory "without any material benefit for itself would mean depriving the Ukrainian people of part of their national wealth."

IF [INTERFAX] Note: A total of 176 strategic missiles are at present stationed on Ukrainian territory.

Stressing again Ukraine's desire to become a nuclear-free state, Kravchuk said this meant solving many problems which may arise in parliament as the latter considers the ratification of the START treaty.

Kravchuk said the nuclear states should pledge "not to use mass-destruction weapons against those states which have got rid of their nuclear weapons." This, in his view, can guarantee Ukraine's security.

Kravchuk Meets NATO Chief on Nuclear Issues

LD1611200892 Kiev Ukrayinske Telebachennya Television Network in Ukrainian 1700 GMT 16 Nov 92

[No video available]

[Text] General John Shalikashvili, supreme commander of NATO forces in Europe—he is also the commander of U.S. forces in Europe—is in Kiev on an official visit. A report from our correspondent, Volodymyr Hutsov:

[Hutsov] Today General John Shalikashvili met with Leonid Kravchuk, president of Ukraine. There was an exchange of views with regard to the problems of Ukraine's nuclear-free and nonaligned status. We are

firmly abiding by this policy, President Kravchuk said. Those countries that are interested in nuclear disarmament of Ukraine should guarantee its security, however. A statement on the non-use of weapons of mass destruction against those states which have voluntarily given them up would be beneficial.

In the opinion of Leonid Kravchuk, Ukraine should be included in all European structures which would completely guarantee its security and make aggression on the part of neighbors impossible. Practical steps of cooperation between the military of NATO and Ukraine were also discussed, in particular the training of our officers in educational establishments of the North Atlantic Alliance.

These and other problems of military formation and the preservation of stability in Europe were discussed during the meeting of John Shalikashvili with Defense Minister Kostyantyn Morozov and Foreign Minister Anatoliy Zlenko.

Ukraine Deputy Minister on Nuclear Weapons Code

LD1411142492 Kiev Radio Ukraine World Service in Ukrainian 2300 GMT 13 Nov 92

[Text] Ukrainian Deputy Defense Minister [Borys] Tarasyuk has said that he does not know anything about any kind of attempts to draw up Ukraine's own nuclear weapons codes. Tarasyuk, who heads the Ukrainian Committee for Disarmament, said this in an interview with Radio Liberty, commenting on an article in THE NEW YORK TIMES. The article asserted that one of the institutes in Kharkov is working out new nuclear weapons codes.

Ukraine Stresses No Sale of Nuclear Weapons

LD1711213592 Moscow ITAR-TASS in English 1913 GMT 17 Nov 92

[By UKRINFORM correspondent for TASS]

[Text] Kiev November 17 TASS—After the Soviet Union disintegration and the elimination of the Warsaw Treaty, political tasks gain the priority in NATO policy. Supreme Allied Commander Europe John Shalikashvili told Ukrainian Supreme Soviet Chairman Ivan Plushch and Prime Minister Leonid Kuchma.

NATO is interested in the preservation of peace, upkeep of stability and security in Europe, settlement of armed conflicts on the continent and rendering of humanitarian assistance to CIS states, he noted.

A NATO delegation headed by General Shalikashvili is currently in Kiev on an official visit. Visit results were

summed up today at a joint news conference of Ukrainian Defence Minister Konstantin Morozov and General Shalikashvili.

The major aim of the visit is to discuss military-political cooperation with new Ukraine and help formation of its armed forces, said the general, adding they were glad to hear Ukraine remains adherent to the principles of a non-nuclear and off-bloc state.

It was stressed during the meetings and the news conference, Ukraine does not intend to sell nuclear warheads to anyone. The issue of their elimination is being solved together with Russia. They also raised technical and financial problems of elimination of strategic nuclear arms stationed on Ukrainian territory, provision of its safety and social aspects connected with the reduction of the Ukrainian Army and its building.

It was noted the Ukrainian parliament soon plans to ratify a package of documents on reduction of strategic nuclear arms and non-proliferation of nuclear weapons.

Kazakh Official Denies N-Arms Sales Reports

LD1711020692 Moscow ITAR-TASS World Service in Russian 1348 GMT 16 Nov 92

[By KAZTAG correspondent Ivan Zakharchenko for TASS]

[Text] Alma-Ata, 16 Nov—"The assertion that Kazakh territory holds enough nuclear weapons to ensure that the globe could be destroyed twice over will only evoke a bewildered smile from a competent person. I state categorically that our Republic loyally observes all treaties on nuclear weapons and advocates the total destruction of such weapons," stated Kim Serikbayev, head of the defense department in the president's apparatus and the Cabinet of Ministers of the Republic of Kazakhstan.

Such an assertion was made by Yusuf Wali, Egyptian deputy prime minister and secretary general of the National Democratic Party, the ruling party in Egypt, in a speech in Aswan on 12 November. In his words, some neighboring states are presently negotiating with Alma-Ata at the highest level with the aim of obtaining the lethal weapons; they can subsequently be used against the Arab countries and against Egypt in particular.

It is absurd to even suggest that we intend to sell them to anybody, Serikbayev stressed in an interview to KAZTAG. "Let Yusuf Wali have this statement on his conscience," Serikbayev said.

"This is by no means the first fabrication," he pointed out. "Many people are not happy to see stability in our state and the authority it enjoys on the international scene, which was achieved, to a large extent, thanks to the president and government. Some not quite honest people are prepared to resort to any provocations to inflict damage on the newly emerged sovereign Kazakhstan."

FRANCE

Supply of Nuclear Fuel to India To Continue

*BK1511091092 Delhi All India Radio Network
in English 0830 GMT 15 Nov 92*

[Text] France says it will continue to provide nuclear fuel for the Tarapur power plant after the present supply agreement ends next year. A French external relations ministry spokesman told the visiting UNI [United News of India] correspondent in Paris that his country will plead with other nuclear powers for inclusion of India in any emerging safety regime which is aimed at prevention of diverting nuclear and missile technology to weapon program. The spokesman (Morris Courdo Montania) said the prime minister, Mr. Narasimsha Rao's recent visit to Paris has culminated in establishing a political and economic understanding between the two countries. He said New Delhi's refusal to sign the NPT [Non proliferation Treaty] will not stand in the way of France supplying enriched uranium to the Tarapur plant. He said Paris recognizes India's commitment to peace and international relations.

Contingent on International Control

*BK1711090492 Delhi All India Radio Network
in English 0245 GMT 17 Nov 92*

[Text] France says it will not renew the contract for supply of uranium to India unless New Delhi agrees to keep the nuclear fuel under international control. The French Foreign Ministry spokesman, Mr. (Daniel Bernard), told newsmen in Paris yesterday that his country makes adequate safeguards—a condition for supplying nuclear fuel for new contracts with any country. He was referring to reports in the Indian media quoting a French diplomat as saying that France would continue to supply nuclear fuel for the Tarapur power plant.

Fast-Breeder Nuclear Reactor Program Planned

*OW1811094092 Tokyo KYODO in English 0902 GMT
18 Nov 92*

[Text] Tokyo, Nov. 18 KYODO—France will give up its fast-breeder nuclear reactor program when it resumes operation of the remodeled super Phoenix Nuclear Reactor, French Space Research Minister Hubert Curien said here Wednesday [18 November].

Fast-breeder reactors use reprocessed plutonium as fuel but produce more plutonium than they consume.

The visiting French minister said at a press breakfast that France will resume operation of super Phoenix but drop its key function of breeding plutonium.

Operation of the French fast-breeder reactor was suspended in July 1990 after a spate of accidents.

Curien's remarks mean France will give the reactor a new identity, enabling it to burn die-hard transuranium elements along with plutonium.

Transuranium elements such as americium and neptunium are found in spent nuclear fuel and remain intact for a long period as radioactive materials.

Currently, they are disposed of as high-level waste deep below the ground.

If France abandons its fast-breeder reactor operation, Japan will be the only country in the world promoting such a nuclear energy program with its prototype fast-breeder reactor Monju.

The first Japanese plutonium-producing reactor was completed in Tsuruga in Fukui Prefecture on the Sea of Japan in May 1991 and has since been undergoing trial operations.

GERMANY

Plutonium Transport to Scotland Planned

*AU1611162392 Hamburg DER SPIEGEL in German
16 Nov 92 pp 157-158*

[Unattributed report: "Not Even as a Gift"]

[Text] Environment Minister Toepfer was not pleased about the television and newspaper reports last week. He saw policemen dragging 400 environmental activists from a crossing and read about 2,000 policemen loading 1.5 tonnes of highly toxic plutonium dioxide onto the Japanese freighter "Akatsuki Maru" in Cherbourg, and about warships accompanying the freighter.

The spectacle made the Bonn environment minister doubt the wisdom of his plans for a short while. Toepfer, too, has transportation problems. Without causing public attention, the minister would like to transport 1.2 tonnes of radioactive nuclear material from the plutonium bunker in Hanau to Dounreay in Scotland in the next few weeks.

Toepfer has chosen a risky transportation mode. He plans to send seven planeloads of nuclear material to Scotland. The pictures of the military presence and the Greenpeace activities in Cherbourg caused the Bonn minister to fear that he is not likely to get rid of the poison as elegantly as he had hoped. Yet the nuclear material must disappear, and quickly at that.

The transportation of plutonium aboard the "Akatsuki Maru" from France to Japan and Toepfer's transportation plans have once more made clear to the world the madness of the nuclear industry. These two dangerous and ghastly shipments are the result of a policy that did not take into consideration the end at the outset. Final disposal sites for nuclear waste do not exist. Even the nuclear industry does not know how the stuff can be stored safely over millennia. For this reason, the radioactive waste must be transported at great risk by sea, by air, by land and by rail from temporary storage site to temporary storage site.

Toepfer's problem with the plutonium in Hanau is particularly bizarre. The nuclear waste—nearly the same

quantity as the one loaded in Cherbourg—is brand new but still worthless. It consists of 123 unused fuel elements.

The unwanted commodity was ordered many years ago by the Fast Breeder Nuclear Power Plant Society (SBK), a subsidiary of the Rhineland-Westphalian Electricity Company [RWE] and some other electricity firms. The fuel rods were manufactured by Siemens in Hanau and were to be used for the fast breeder in Kalkar.

The breeder reactor, which cost about 10 billion German marks [DM] and which is one of the largest investment disasters in Germany's economic history, has never been completed, and the dangerous plutonium fuel has never been used. Yet it has had to be disposed of somehow.

At the Hanau plutonium bunker of the Siemens company, the government has rented part of a store for radioactive fuels, which is separated from the remaining storeroom just by a yellow adhesive tape on the floor. There the SBK was allowed to store the superfluous breeder fuel temporarily, at a rent of DM250,000 per month.

The breeder elements have been lying there for years. But now Siemens wants to get rid of them. They urgently need the space because otherwise Hesse's Environment Minister Joschka Fischer will not be ready to allow the resumption of the production of fuel elements for light water reactors.

In addition to the rent, Siemens has threatened to sue SBK for damages involving million of German marks. The company in charge of liquidating the breeder immediately turned to the Bonn environment minister and demanded the reimbursement of costs.

Toepfer must now decide on what conditions a clearance of the storage site is possible. Above all, he must decide where the radioactive material is to be taken. In Germany there is no other nuclear disposal site where plutonium can be stored.

The company looked around abroad and discovered Dounreay in Scotland. A prototype fast reactor (PFR) is operating there. The RWE managers offered the fuel elements to their British colleagues, who showed some interest. The SBK quickly bought an old building in Dounreay and converted it into a plutonium storehouse.

In the meantime, the new storehouse is no longer empty. Unnoticed by the public, 80 fuel rods from Dessel in Belgium were transported to Dounreay by rail and sea.

Toepfer wants to have the Hanau fuel rods shipped to Dounreay as quickly as possible. When weighing the risks of moving the plutonium by land and sea against those of seven air cargo shipments, Toepfer selected air. Even Lothar Hahn, nuclear expert of the ecological institute in Darmstadt, admitted: "The decision is not easy." According to the Society for Reactor Safety, the probability of an accident or the likelihood of a terrorist

attack are greater by land and sea, but the probability and the extent of contamination of the environment and of people are smaller.

Transportation by aircraft is generally safer, but a crash would cause a disaster. The fuel rods are protected by steel containers. They could withstand an impact from a height of nine meters if they hit a rigid obstacle, or 30 minutes of 800 degrees of heat. During an airplane crash the containers would be damaged in many cases, however.

Since kerosene usually burns in crashes, the plutonium would probably dissolve into small particles that could be inhaled. The highly virulent poison would threaten all live within a large radius. For Toepfer, transportation by air offers a particular advantage: The nuclear material intended for civilian use might leave the country unnoticed aboard British military aircraft—because soldiers are subject to professional discretion.

When transporting the nuclear material by rail or trucks, Toepfer might face protest action. Members of the International Transport Workers Federation have close links with Greenpeace. They watch out for unusual nuclear shipments.

There is no doubt that the Hanau fuel rods will be transported to Scotland. The hopes of the SBK officials that they might be able to sell the unused commodity for a few pounds in Dounreay, have been dashed, however. The British government has decided to close down its test fast breeders. Thus, there is no demand for breeder fuel elements in Great Britain either.

SBK head Werner Koop still considers storage in Dounreay advantageous, however. At the research center, the fuel elements can be modified in such a way that they are suitable for any other breeder reactor.

The German plutonium owners first planned to send the nuclear material to the Fast Flux Test Facility (FFTF) in Hanford in the United States. Yet the FFTF does not operate breeders either at present, and is unlikely to do so in the future. Even in France the breeders "Phoenix" and "Superphoenix" have been shut down or are not operating at full capacity.

The future of the breeder technology is bleak. Only the Japanese are still constructing a plutonium reactor. The SBK have tried to strike a deal with them, but without success so far.

SBK chief Koop would even give away the fuel elements for free, but he cannot find anybody who wants them. Everybody in this line of business knows that the SBK wants to get rid of the hot stuff urgently. "They know exactly in what a precarious situation we are. This will cost us quite a lot of money," Koop stressed.

Things will become really expensive if the SBK fails to get rid of the plutonium. In that case it will have to have the fuel elements reprocessed in the French reprocessing plant of La Hague to make them suitable for ultimate

storage. This would involve great expenditure and millions of German marks. The SBK does not have enough money, however.

The way out is clear: The SBK will file a bankruptcy petition. As stipulated in a risk participation agreement with the Research Ministry, the owners—the electricity

companies involved—are exempted from the obligation to make an additional contribution.

Thus, the state is the ultimate guarantor: It is obliged to "avert any danger" and is thus responsible for the safe storage of the plutonium.

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